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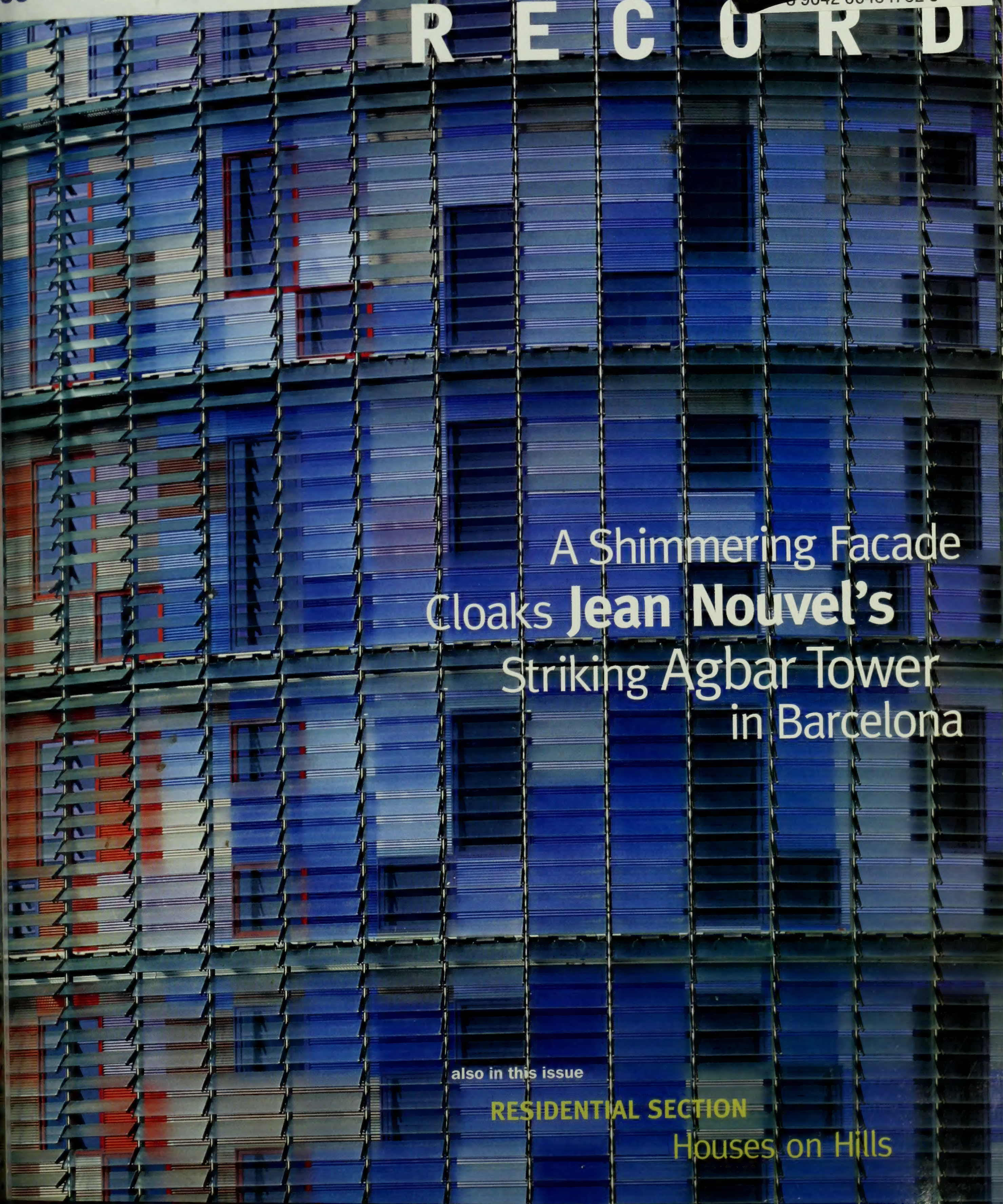

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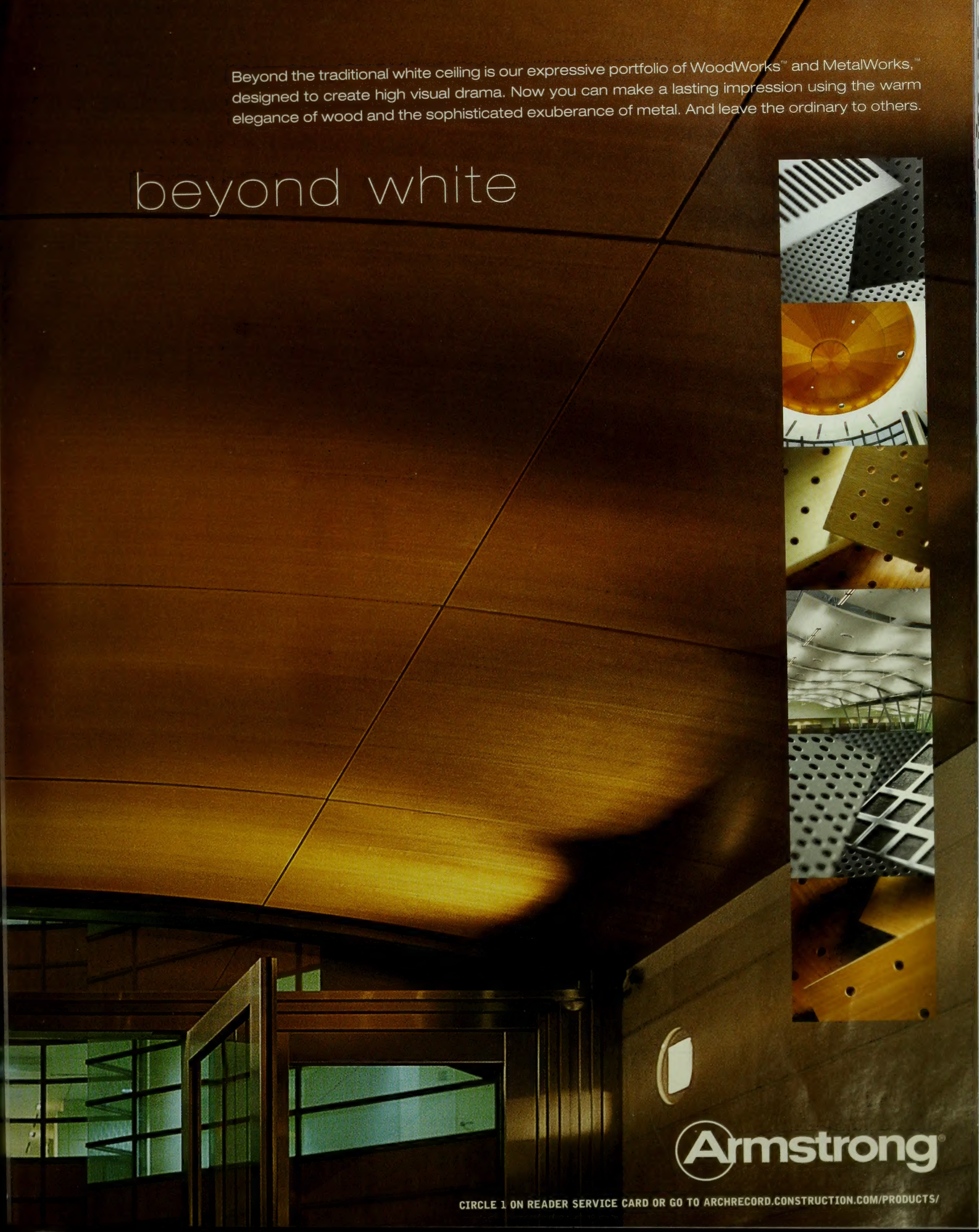

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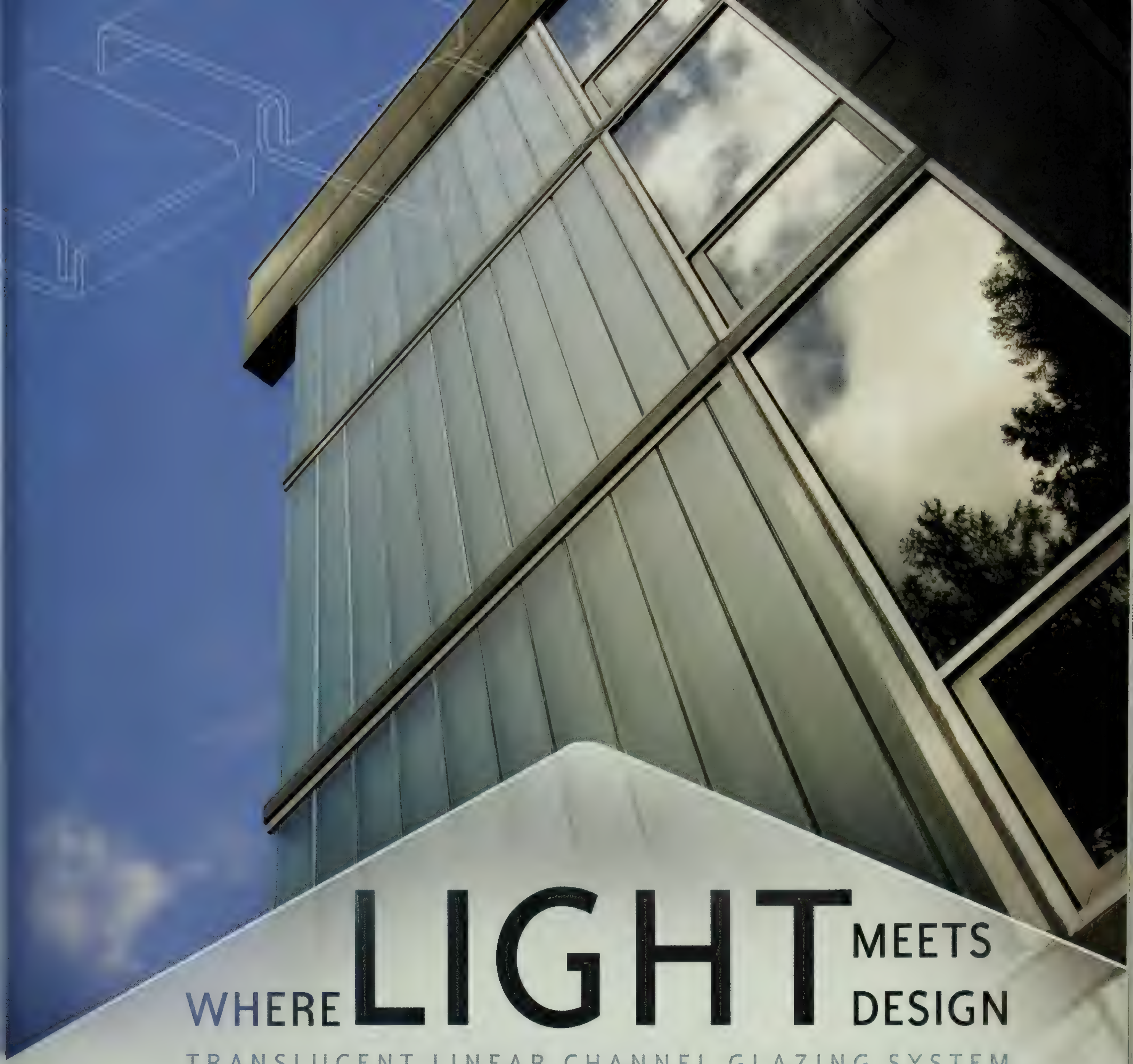

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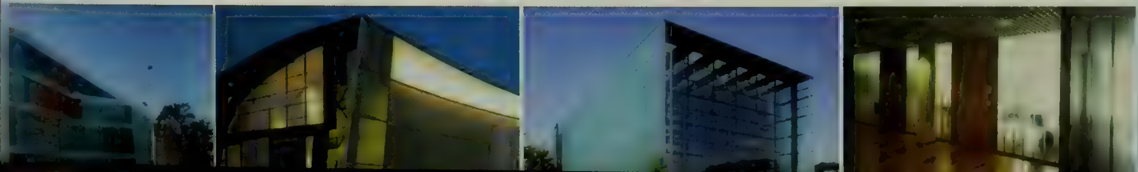

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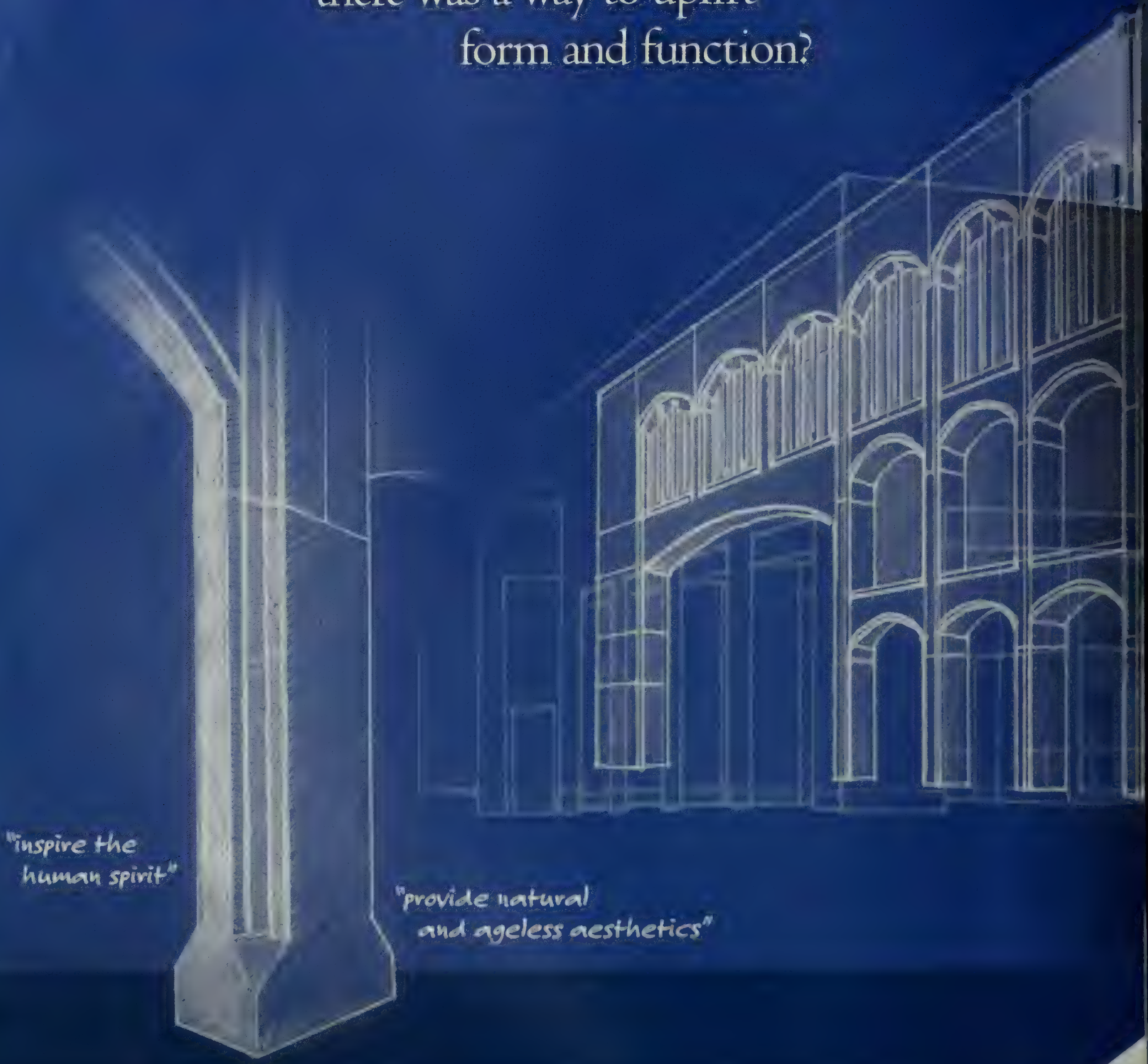

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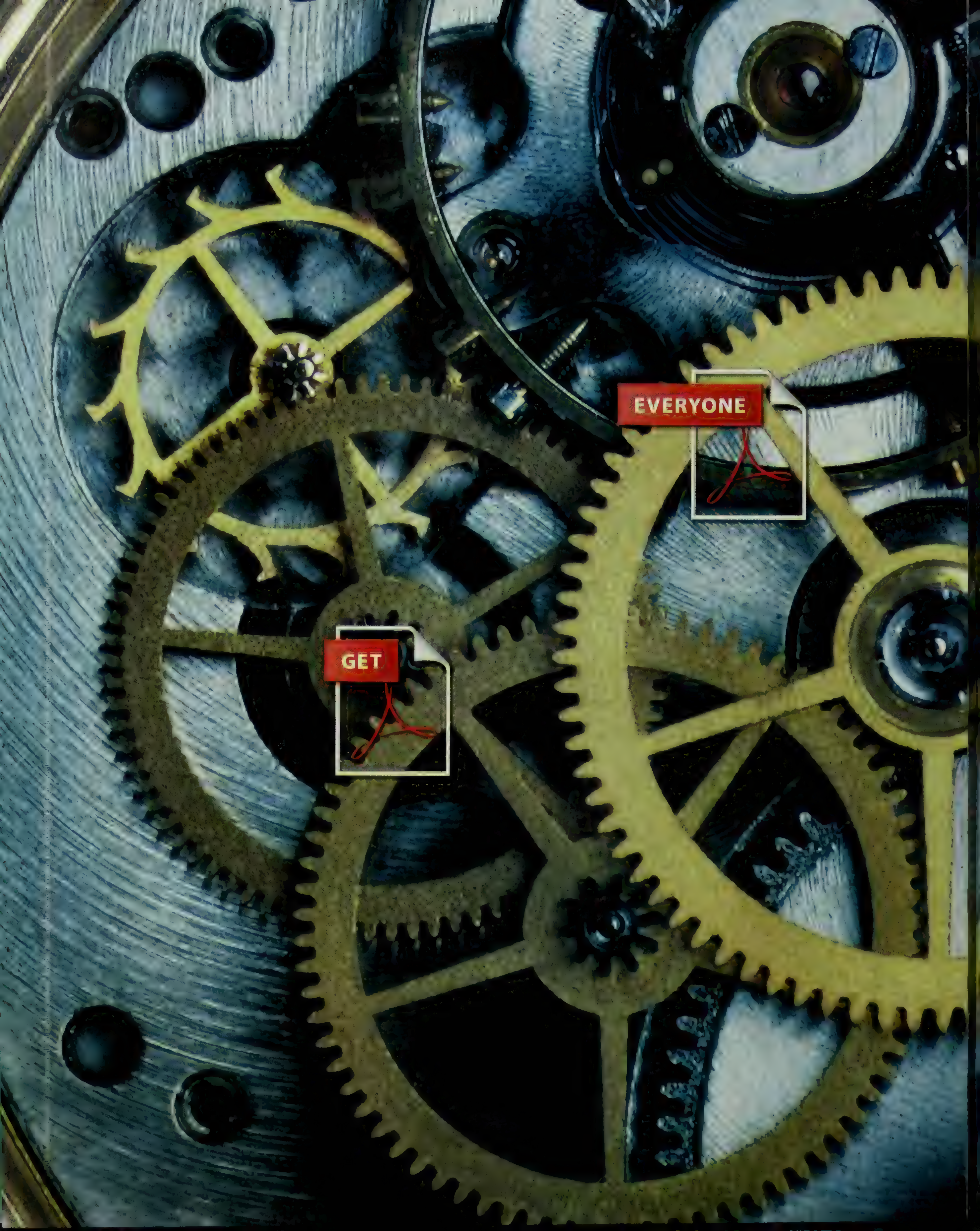
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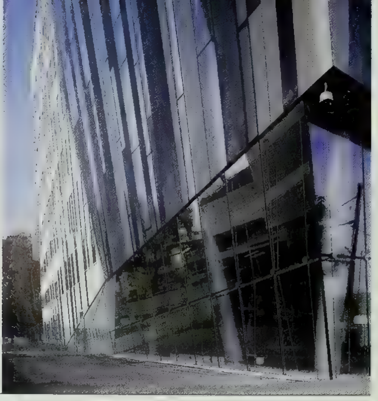

On the Cover: *Agbar Tower, by Ateliers Jean Nouvel. Photograph by Roland Halbe*
Right: *ING Head Offices, by Erick van Egeraat. Photograph by Christian Richters*

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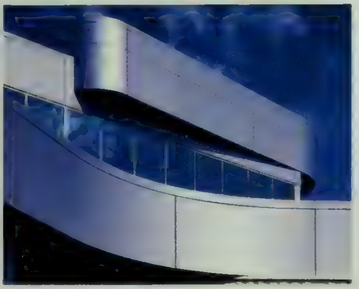

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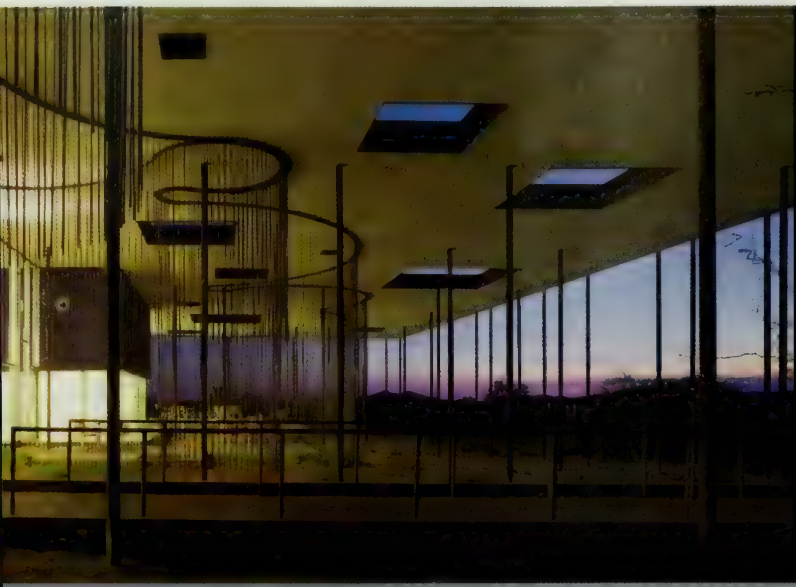

Projects

From the Arizona desert to Texas to Budapest to Spain, this month *Architectural Record* takes you across the globe to view a variety of inspiring projects, both public and private.

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Reconstructing Kuwait

Editorial

By Robert Ivy, FAIA

To drive through contemporary Kuwait today, you could hardly guess the context. Sitting stalled in traffic on the ring road, a thoroughly contemporary highway more reminiscent of Palm Springs than Desert Storm, there is little memory of the area's Bedouin past or its recent history, especially of the early morning of August 12, 1990, when Iraqi forces rolled into town with violent force. Except for the occasional checkpoint at a sensitive government site, there is also little realization of another Iraqi war, just over the border.

Instead, today's Xanadu-like Kuwait City, a metropolis of approximately 1 million, seems to be thriving, running on a river of oil down to a sunlit sea (with apologies to Coleridge). This prosperous, tiny state, which controls a staggering 10 percent of the world's oil wealth, is translating black gold to concrete, banking on the real estate of its capital city as economic anchor for the 21st century. Kuwait City's emerging character serves as a case study for all architects, engineers, planners, and clients, because Kuwait City is rebounding from invasion, with equal, liberated force.

International architects have made the trek up to the crux of the Persian Gulf before, in the construction frenzy of the late 1970s. That was when the Swedish-designed, blue-button-covered tower trilogy that defines the skyline appeared. The market peaked, and waned, as did Kuwait's stock market, which rose and then fell with a thud in 1982, prompting an exodus of construction capital from the capital. In the absence of another Iraqi threat to Kuwait's sovereignty, the money has returned.

Examining the skyline from the highway, the view appears vaguely Americanized and totally new. Major design houses from Europe and the United States, together with their local counterparts, have each contributed tall buildings that stand in ribbons from north to south, with large gaps in between. At the human scale, the lower-scaled remnants of a 1950s city peer out at random, lively witnesses of a modified International Style, layered in neon and paint. Where are we, anyway?

The Kuwait Society of Engineers, a group that includes its architects, recently convened a symposium on Middle Eastern architecture called "Directions" to address such questions. The conference asked, what values do we want our cities to reflect? What are the formative constraints on architecture in a distinctive culture: climate, people, economy, myth, and belief system? What is the role of ornament (in this case, geometric Islamic ornament)? Of craft? Examples within this forum dissected distinctive historic patterns within the Arabian Peninsula, reminding audiences how tight-knit social systems produced clustered housing with clearly differentiated public and private zones and interconnections through internal passageways. Today, standard lots with large freestanding houses or apartment blocks seem derived more from Desperate Housewives *than from a people's deep memory.*

While drawing no firm conclusions, the conference—and a simultaneous gathering of architecture critics sponsored by the Aga Khan Award for Architecture—produced discussion on the potential role of a cluster of factors such as climate in shaping a new architecture, one more appropriate for a new Kuwait. This energy-rich nation can theoretically lead others toward a more sustainable architecture, where climatic response helps shape the buildings of the future.

Simultaneously, a competition for the downtown node near the city's historic post office and Salhia Plaza demonstrated that the time has come for freewheeling growth to be channeled into authentic, three-dimensional urbanism. While conceptual, the competition provided a new vision for Kuwait City's downtown that may spur urban planning for other Middle Eastern cities.

Since the trip to this distant country demands 14 hours of hard flying time from the United States, it might be easy to dismiss the professional ruminations of a group of architects or engineers on the far side of the globe. What does this desert have to do with California's? Kuwait proves how quickly cities can change, as well as the existential crisis such a recovery can provoke. In our new, interconnected world, with man-made and natural crises abounding, what becomes of Kuwait City—in its search for meaning, for an appropriate urbanity, as well as for its sense of self—bears meaning for the rest of us.

Robert Ivy

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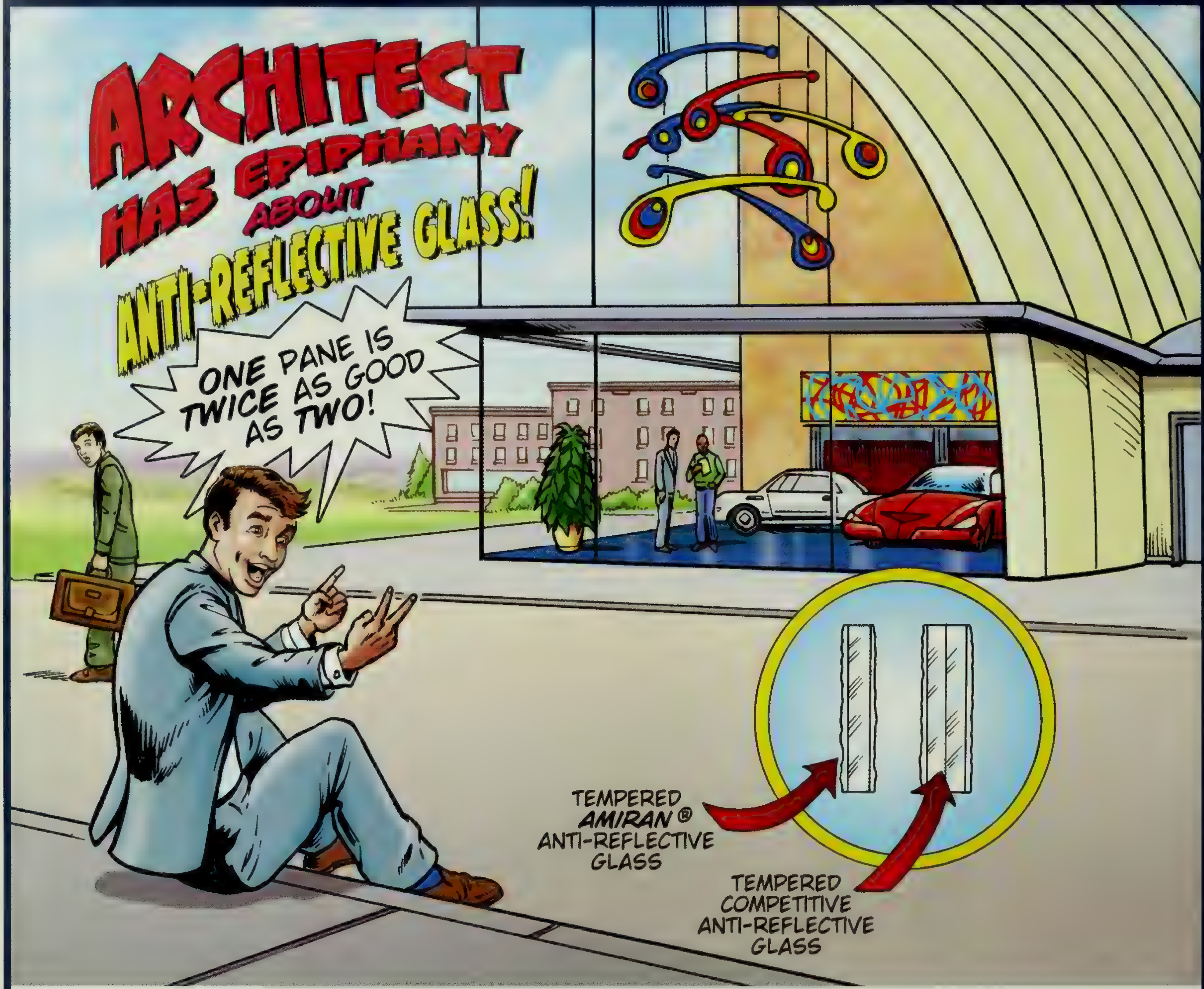
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Letters

Hard times in the Big Easy

Thank you for your editorial about New Orleans ["What Architects Can Do," November 2005, page 17]. We certainly are in a mess and desperately need the support of those in Washington. Many of us feel that the cry for help is falling on dead ears. New Orleans is one of the most important cities in the country—if not the world—for architecture. No other city in the U.S. has the number and percentage of historic structures we have. And it's a unique blend with numerous house types unheard of anywhere else. It simply has to be rebuilt and revitalized. Yet, as you drive around, three and a half months later, entire neighborhoods are dark, the flooded cars are still on the street. It has to be seen to be understood.

An issue devoted to New Orleans detailing the history and culture of the city, along with pictures of the variety of houses, buildings, and neighborhoods, would be a real eye-opener for many around the country who are unaware of what we have (had). There are also architects here with talent, firms that need work (there is none right now as we sit waiting to hear our fate, waiting for insurance companies, and for the verdict on the extent of levee protection Washington will provide). Certainly, if there is a federally backed revival and reinvestment starts, we will all be very busy. The question is, how long can we expect to wait? How long can we keep paying our staff members? The problem is many layered and will take much time to resolve.

—Mac Ball
Waggonner & Ball Architects
New Orleans

Sustainable solutions

I read your editorial about taking action in the aftermath of Hurricanes Katrina and Rita. In it you ask, "Are there that many trees and nails available for the massive rebuilding effort? That much concrete? And with so many demands made on resources, how can the sheer numbers of housing units required be realized?" I ask, must we rely on traditional building materials, such as timber, nails, and concrete? The current situation presents a great opportunity for architects, engineers, and planners involved in the rebuilding efforts to take a nontraditional look at the problem and apply sustainable construction materials and techniques.

—Evonne S.C. Chong
Tasmania, Australia

Taking down the de Young

Your recent review of the de Young Museum in San Francisco [November 2005, page 13], well written as it was, neglected the problems the building has with its exterior massing and finish. Only a dismissive comment at the article's end mentioned many people's strong dislike for its hulking and homely exterior. The building does not work with regard to exterior light conditions as they affect massing, texture, and color. Furthermore, the photographs featured do not convey its unrelenting massiveness. There are movements in Modern architecture which today are reviled, but once were greeted with great enthusiasm. Witness Brutalism: As architects know, many cities today cannot wait to get rid of many of the concrete monstrosities they produced. The ungainly, misshapen, and unattractive exterior of the de Young Museum, however stylistically current it may be today, will certainly be on that list in the future.

—James Shay, FAIA
San Rafael, Calif.

Modern optimism

The introduction by Jane F. Kolleeny to "Multifamily Housing: Fighting Sprawl" cited traditional families as the reason for suburban sprawl and credits nontraditional families, and others, for the renewed interest in urban living. While this is probably mostly correct, it is striking that ARCHITECTURAL RECORD doesn't assume a more positive outlook for the future of traditional families returning to the city. Supporting this blame-game truism reinforces unfortunate misconceptions about the lifestyle desires of all kinds of people, and forgets that urban influx housing is primarily affluent housing (The D.C. Fiscal Policy reported that affordable housing in the district fell by nearly 12,000 units last year). Kolleeny proposes that it's predominantly single parents, retirees, empty nesters, and young professionals who desire to move into urban areas. Why exclude traditional families? Why not take an inclusive stance about the attraction of good design? Why not resurrect the Modern optimism about good design's universal attraction and powerful models for future living instead of past failures?

—Camilo Llorens Bearman
Ritter Architects
Alexandria, Va.

Drawing the professional line

With regard to your September editorial, "The View From Two Penn" [page 19]: Where is the line between professional responsibilities and profit? As a profession, is it not our role to ask "how does this project fit in?" as part of the charge of protecting the health, safety, and welfare of the public? When a developer client asks a firm to conceptualize a project in another city, does that architectural firm have a responsibility to ask the tough questions? Or is it a matter of don't ask, don't care, it's not in my backyard—let the locals deal with the problems. As a profession, are we mercenaries for hire? Or do we serve the greater good?

—Brion Lipschutz, AIA
Ayers Saint Gross Architects & Planners
Baltimore

Dog days

Your writing on poorly designed buildings truly struck a chord with me. I am involved in traditional architectural design; however, my work focus over the past 20 years has been real estate due diligence, which has allowed me to become intimately familiar with buildings of note in most every major market in the country. I agree with you wholeheartedly that the architecture profession will be well served by stepping back, looking at the mistakes, and learning from them. I am fortunate to be in your fair city several times each month, and yes, you have a few shining examples of these buildings. However, the wonderful architecture in New York City balances these out very well. Not to pick on them, but Boston, Chicago, Atlanta, and Los Angeles could learn from the same self appraisal. Keep up the great work.

—Ron Hadaway, Associate AIA
Atlanta

Corrections:

In the obituary for Edmund Bacon [December, 2005, page 36], the phrase "who was raised as a Quaker" was accidentally omitted. The sentence should have read: "Always his own man, Edmund Bacon, who was raised as a Quaker, entered the Navy during World War II, instead of registering as a conscientious objector."

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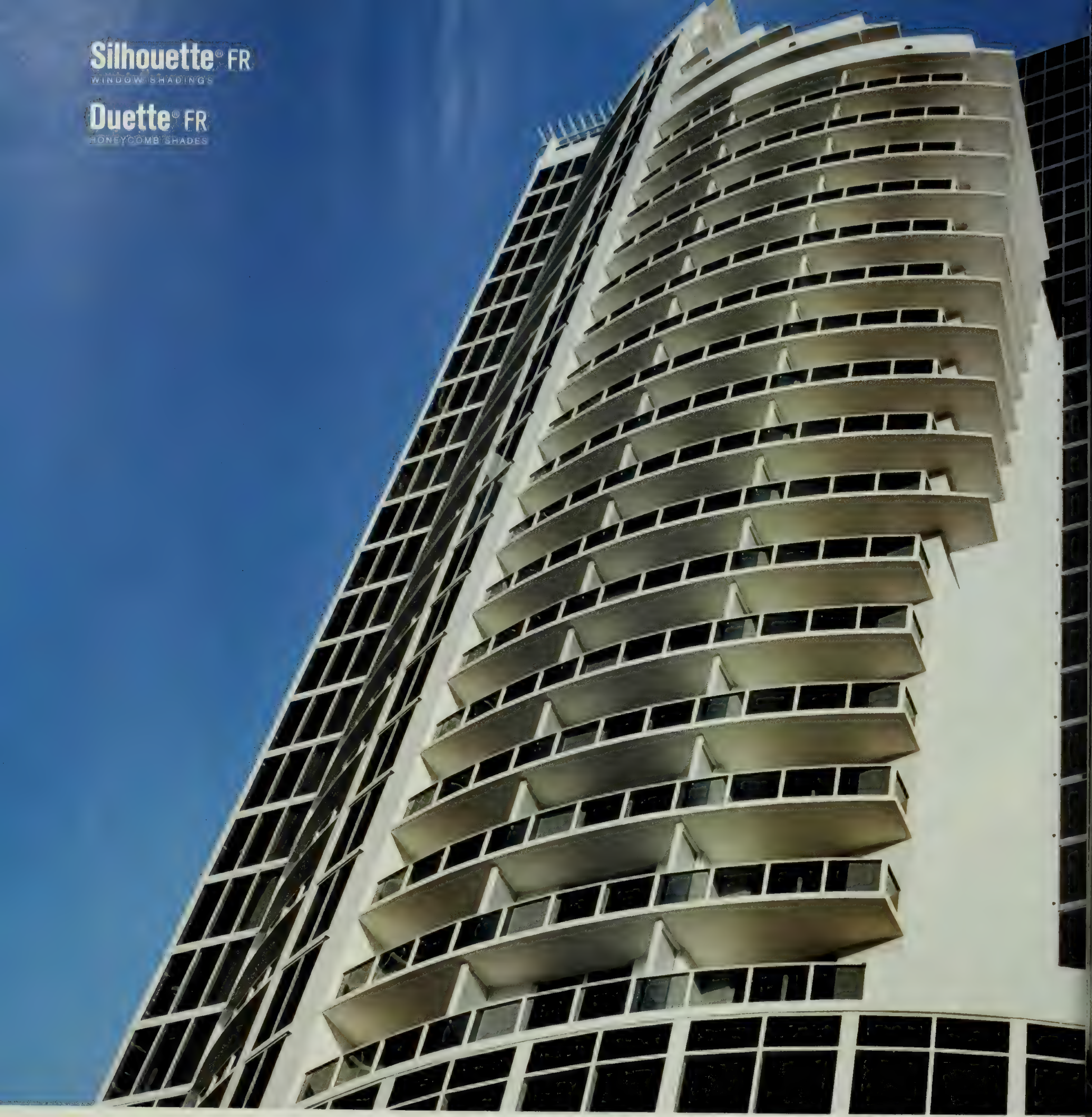

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Record News

Highlights

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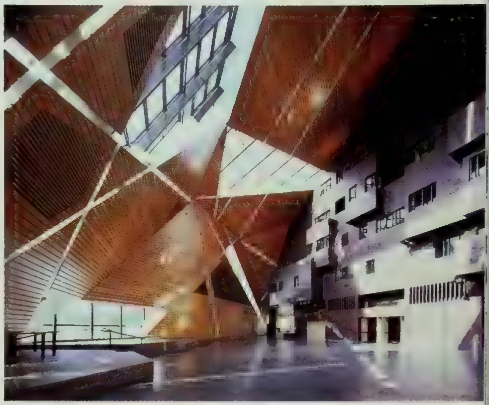
p. 36 **Power struggle heats up at Ground Zero**

p. 38 **Viñoly sued over Kimmel Center project**

p. 40 **Culture within steel mills in Bethlehem**

AIA Gold Medal, Firm Award go to Antoine Predock, Moore Ruble Yudell



Predock's McNamara Alumni Center in Minneapolis.

Antoine Predock, FAIA, has won the AIA's highest honor, the 2006 AIA Gold Medal, and California-based Moore Ruble Yudell Architects have won the 2006 Firm Award.

Predock, based in Albuquerque, New Mexico, becomes the 62nd AIA Gold Medalist. His work, which spans roughly 40 years, is inspired perhaps most by the country's rugged landscapes, with buildings that often emulate rock formations, combined with contemporary angular forms. Another major influence, says the architect, is the cultural landscape surrounding each building. Predock notes that poets, writers, painters, and dancers are some of his greatest influences, next to the likes of Louis Kahn and Frank Lloyd Wright. "We delve into everything about a site," he says of his firm's highly site-specific work, which he calls "episodic," and even "cinematographic."

Moore Rubell Yudell's Steger Student Life Center in Cincinnati.

One well-known project is the Minnesota Gateway in Minneapolis, whose facade seems similar to a large stone face. Its interior is highlighted by a public space formed by an irregular polyhedron of colliding granite planes and glazed fissures that allow sunlight to enter in sharp beams. The recently completed Flint RiverQuarium in Albany, Georgia [RECORD, May, 2005, page 218], merges the rocky geology of the city's Flint River with the building itself, formed with concrete and limestone blocks. Predock recently completed a new City Hall for Austin, Texas, and a new baseball stadium for the San Diego Padres. His office has just opened a branch in Taipei, Taiwan, and last month broke ground on the National Palace Museum in that city. The project, like much of Predock's latest work, is lighter, employing glass, steel, and bronze, and utilizing high-tech materials like photovoltaics throughout its meshlike facade.

Predock, born in Missouri, studied architecture at the University of New Mexico and at Columbia University. His firm has won numerous regional AIA awards, and he won the American Academy's Rome Prize in 1985 and the Chicago Architecture Prize in 1992.

Completing an honors lineup tilted toward the western states, Moore Ruble Yudell, headquartered in Santa Monica, has garnered acclaim for its humanistic, urban, welcoming, large-scale residential and mixed-use projects. The firm is led by partners John Ruble, FAIA, and Buzz Yudell, FAIA, and was established in 1977. An excellent example of the firm's work is the recently completed Joseph A. Steger Student Life Center at the University of Cincinnati [RECORD, August 2005, page 118]. Here, the firm created a lively, light-filled collection of spaces by carefully overlapping interior and exterior areas, and juxtaposing brick, metal, and concrete materials. The "Tango" Housing in Malmö, Sweden [RECORD, February, 2002, page 156] employs subdued massing and angular geometries to both mesh with its surrounding streetscape and add excitement to its interior courtyards.

The firm has also completed civic, cultural, institutional, and research projects. In addition to architecture, it provides interior and graphic design services.

Both the Gold Medal and Firm Award will be handed out at the AIA's Accent on Architecture Gala in Washington, D.C., on February 10. *Sam Lubell*

Topaz Medallion and 25 Year Award complete major prizes

Topaz Medallion William McMinn, FAIA, will receive the AIA and Association of Collegiate Schools of Architecture (ACSA)'s 2006 Topaz Medallion for Excellence in Architectural Education. McMinn, 74, is best known as the founding dean of the architecture program at Florida International University. McMinn achieved full accreditation for the department from the National Architectural Accrediting Board (NAAB) and changed its status to a school of architecture in 1997. McMinn also served as dean of the College of Architecture, Art and Planning at Cornell and as NAAB president, and helped establish architecture programs in Jordan and Saudi Arabia.

25 Year Award This year's recipient of the AIA 25 Year Award is Thorncrown Chapel, designed by E. Fay Jones. The building is considered the most famous work by Jones, the highly regarded student of Frank Lloyd Wright. Located in Eureka Springs, Arkansas, the structure rises from a flagstone wall that nestles into an Ozark hillside. A rhythmic series of diamonds appears in a system of cross-lattice wooden members overhead, which are a counterpoint to the attenuated volume. These trusses also recall the intertwined tree branches viewed through the chapel's 425 windows. Jones passed away last year at age 83 [RECORD, October 2004, page 31]. *David Sokol*

SPECIAL HURRICANE REPORT

Mississippi charrette report is complete

Amid the bleak news from the Mississippi Gulf Coast comes a beam of optimism: the completion of a report on the mid-October planning charrette led by the state and the Congress for the New Urbanism (CNU) in Biloxi. The report, released in print on November 21, posits that the Gulf will emerge a better place, and that the nearly clean slate left by Hurricane Katrina offers the area an opportunity to be the first U.S. region "to arrive at the inevitable future" of sustainable development.

Mississippi Governor Haley Barbour gave Miami-based architect and planner Andres Duany the go-ahead to lead the charrette, which took place from October 11 to 18. One hundred and twenty members of CNU—designers, engineers, and other specialists—plus an almost equal number of Mississippi officials and professionals, gathered for a week to brainstorm ideas for resurrecting a 120-mile coastal region, including 11 cities.

Reconnect towns

The report first suggests reconnecting the Gulf's towns and their region by turning Highway 90 into a beachfront boulevard, moving the CSX freight rail line to the north of I-10, transforming the abandoned CSX right-of-way into a boulevard for cars and transit, and creating a high-speed, east-west rail network linking the Gulf Coast with Mobile and Pensacola to the east and Baton Rouge or Houston to the west. Improved freight and passenger rail service, says the report, "has the potential to substantially bolster the economy and vitality of the Southern states." As for roads: "There is a sense of urgency to restarting the local economy that can be assisted through strategic road and bridge projects." Because "design matters," all road, transit, and bridge projects "should pay attention to the details of place-making."

Revive downtowns

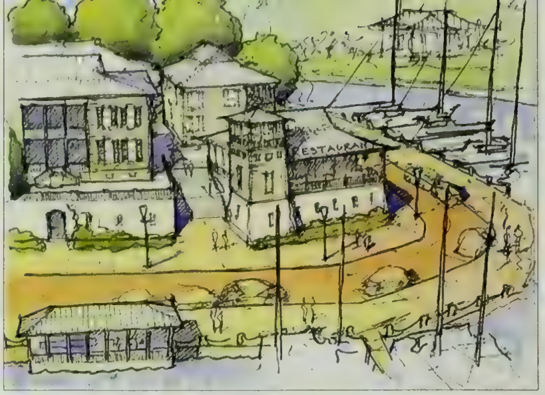
Beyond advocating such New Urbanist trademarks as pedestrian-friendly, mixed-use, and transit-based communities, the report suggests stopping the exodus of retail from historic towns. To revive downtowns, it suggests establishing business-improvement-district authorities. Historic buildings would be rebuilt or restored and form-based zoning codes and regulatory boards would be adopted. Coordinated leasing plans could be used to attract leading retailers and big boxes, and it has been suggested that new casinos could be located in downtown shopping districts, or linked to them. Overall, regional planning would be used to discourage sprawl.

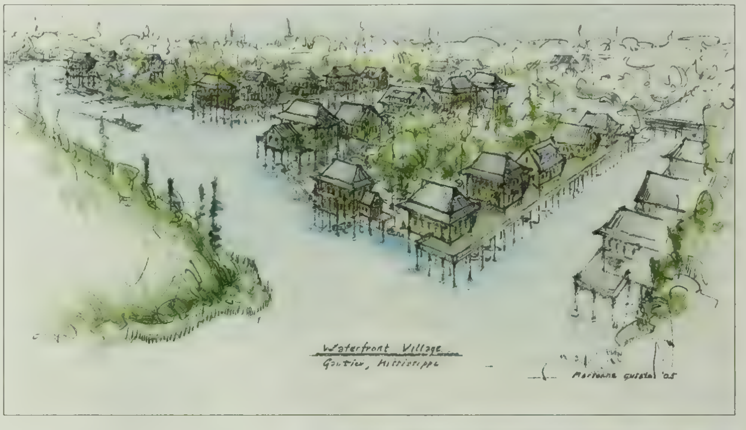
Housing issues

A section on housing options recommends that temporary buildings be designed so that they can later be made permanent, and points out that permitting needs to be expedited. Modular and prefabricated structures "with individual identity" could cut construction time, and that bringing manufacturers to the region could reduce costs and delivery times. Setting regional design standards for architectural detailing could enhance safety. The report also recommends appointing town architects to oversee the rebuilding. As a companion to the report, Urban Design Associates produced *A Pattern Book for Gulf Coast Neighborhoods*, a resource for homeowners, builders, and communities.

Flood control

The report also exhorts FEMA to replace prescriptive flood-control standards with performance-based principles, and offers some alternatives to expensive, "anti-urban" stilt houses. Recommendations include "submersible dwellings," designed on raised porches using hurricane- and mold-resistant technologies and materials, and buildings with wide openings, tall ceilings, and appropriate ground-floor finishes that permit storm surges to flow through. These ideas are not universally accepted. Todd Davison, mitigation director for the Federal Emergency Management Agency, insists it is not possible to build beachfront homes or buildings that





Proposed plans include walkable, human-scaled downtown streetscapes (top), stilted housing developments (above), a raised casino (right), and development begun far from the coastline (below).

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SPECIAL HURRICANE REPORT

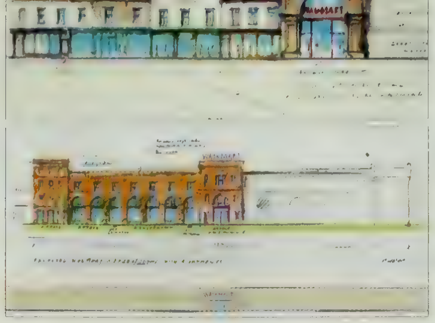
(continued from page 30)

can withstand a major hurricane without "ugly and expensive" pilings. Architect and urbanist Stefanos Polyzoides of Pasadena, California, who led a charrette design team for rebuilding Biloxi, told that city's leaders, "You have two choices, as I see it. Either scrap Biloxi and move north, or create a town that can take a swim every 30 years."

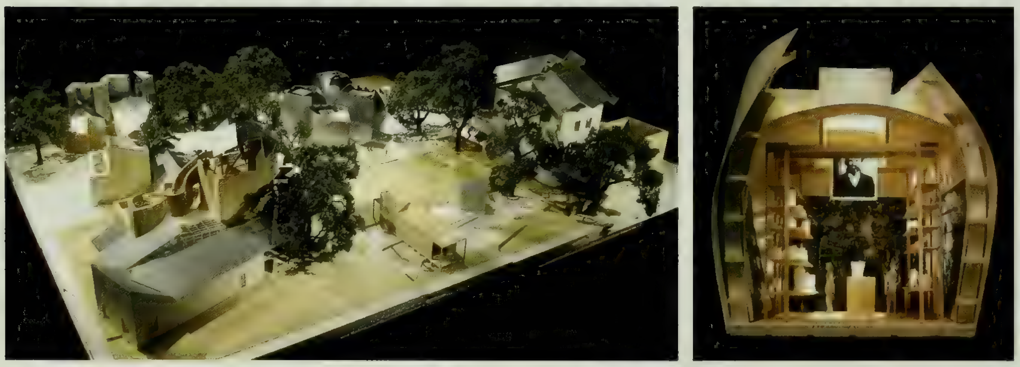
Time is of the essence, warns the document. The best policies, codes, and design criteria must be put in place quickly "so that redevelopment on an appropriate scale can take place just as quickly as sprawl development would." The report says that mayors and other officials will have to take projects under their wing, the Mississippi Department of Transportation will have to be convinced to relocate roads and infrastructure, and builders and developers will have to be persuaded of traditional urbanism's value. Finally, the report urges towns to stay in close contact with each other during planning and rebuilding, so that good "solutions can be duplicated elsewhere in the region."

Resistance

Predictably, the CNU's proposals have met heated resistance. Reed Kroloff, dean of Tulane University's School of Architecture, criticizes a "pattern-book, cookie-cutter approach." While agreeing with New Urbanist ideas about creating dense communities sensitive to transit issues, he asserts that "any ideas that can be boiled down to a set of guidelines don't respond to the diversity of human nature and the needs of particular locations. Eric Owen Moss, director of SCI-Arc, says, "The New Urbanists have a priori answers before asking vital questions: What should the vision for this place be?" He points out that the New Urbanists' small town model grew out of 19th-century conditions. "This is a very different time," he says. "To assume that relatively small-scale groupings of people are ideal is to be conservative and pessimistic, believing that people want to live in homogeneous, no-risk, no-tension situations. The uncertainty quotient is a part of making cities." Steve Badanes, a founder of the design/build firm Jersey Devil, says he disagrees with some aspects of New Urbanism, but says, "How can you knock a situation where the governor called in architects, rather than developers, to solve urban problems." *Andrea Oppenheimer Dean*



Designers envisioned an area Wal-Mart built along the street line. Its traditional exterior and small scale would fit in with local neighborhoods.



The Ohr-O'Keefe was to feature pavilions topped with curved-metal roof, displaying pottery inside.

Fund established to save Gehry's Ohr-O'Keefe museum in Mississippi

Friends of David Whitney, the respected art curator who died last June, launched a building fund in his honor at New York City's Gagosian Gallery on December 9. It will aid reconstruction of the Ohr-O'Keefe Museum of Art, in Biloxi, Mississippi. The museum, designed by Frank Gehry, FAIA, was headed toward a July 2006 opening when it received substantial damage during Hurricane Katrina.

The centerpiece of the 25,000-square-foot museum comprised four podlike gallery pavilions to show the work of George E. Ohr (1857–1918), the famed "mad potter of Biloxi." He is celebrated as one of America's first ceramic fine artists. Ohr made the act of throwing pots a performance, producing colorful vases and bowls pinched and ruffled into shapes of impressive delicacy. Whitney was consulting curator for the museum's inaugural exhibition when he died. He was also a prominent art collector, and the long-time life partner of architect Philip Johnson. "David was a great friend," said Gehry, standing by an architectural model of the complex at the fund launch. "I will do whatever it takes to get this institution back on its feet."

Gehry's design included six twisting, metal-clad pavilions arranged around 26 ancient live oaks on a 4-acre site. The gallery "pods" are like curved silos, and the rest are boxy pavilions with overlapping curved-metal roofs. Gehry used elements found in local architecture, such as porches and open-air belvederes, on each pavilion.

A casino barge blown onshore by the storm crushed a pavilion devoted to African-American folk art and history. The unfinished gallery pods were seriously damaged. The storm also destroyed the Pleasant Reed House, an 1887 "shotgun" house that had been moved to the site. A center for ceramics, which included storm-resistant storage, was only slightly damaged. Pavilions designed to house artists-in-residence and education programs were also damaged. The Ohr pottery collection was off-site during the storm and was not harmed.

Insurance will cover much of the damage, according to Gerald O'Keefe, who was once the mayor of Biloxi and helped launch the museum with a substantial early gift. The David Whitney Fund will specifically aid the reconstruction of the gallery pods. The museum project was budgeted at $30 million. It is unclear how much additional money will need to be raised to upgrade storm resistance. The museum now expects to reopen in about two years. *James S. Russell, AIA*

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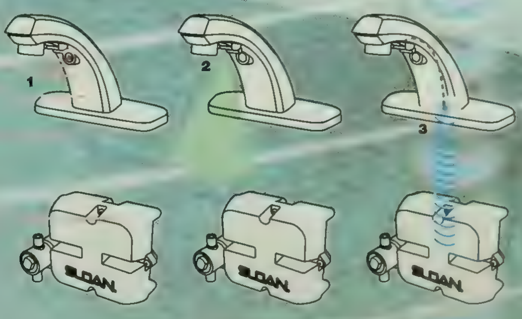

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SPECIAL HURRICANE REPORT

Louisiana passes new statewide building code; critics say it may burden home repairs

On November 29, Louisiana Governor Kathleen Blanco signed legislation for the state to adopt the International Building Code (IBC), a uniform code issued by the International Code Council that will replace a patchwork of municipal controls. The legislation requires that new construction adheres to the code, and that it be applied to home repairs if costs are more than 50 percent of prestorm valuation. After the bill was signed, the 11 parishes hardest hit by this season's storms had 30 days to start applying the code. Those without enforcement officials had 90 days. The code will take effect statewide on January 1, 2007.

Concerns about cost

While many applaud the adoption of a statewide standard for construction, industry experts say the adoption of the IBC will increase the spread between insurance payouts and repair costs, perhaps making it too expensive for many homeowners to rebuild. In the New Orleans suburb of Kenner alone, the Federal Emergency Management Agency says more than 500 houses meet the 50 percent test. Phil Hoffman, president of Hoffman Custom Built Homes in LaPlace, Louisiana, says due to the cost of bringing those homes up to code, "They might just as well bring in the bulldozers and knock it all down."

Louisiana parishes without existing codes will see the sharpest cost increase, says Ronnie Kyle, president of Louisiana Homebuilders Association. "Places like Cameron, which had no code, will have a 17 to 20 percent increase," he says. "Most of Orleans [Parish] was under at least a 1995 code, so it's probably looking at an 8 to 12 percent increase."

To make things more difficult for homeowners, Hoffman says, the code is "basically a wind code," addressing roofs, wind anchors, bracing, siding, and glazing, while most of the damage is from storm surge or flood. Insurance companies, says, Hoffman, "will only pay for the [flood] damaged areas of the house."

Benefits of uniformity

However, the insurance industry, building associations, and contractors say code uniformity for new construction is needed to woo insurers and secure federal funding. "Insurance companies have been taking a really hard look at whether they want to do business in Louisiana anymore," says John Marlow, assistant vice president for the Southwest Region of the American Insurance Association, a trade group.

The code's appeal is uniformity and insulation from ever-changing political influences, says Derrell Cohoon, executive director of Louisiana Associated General Contractors. "It will bring investors back and send a message that it's not business as usual in Louisiana."

Although the new standards will surely increase costs, "if you can't buy insurance, it doesn't do you any good to rebuild," says Kyle. "At some point, you've got to say the cost is what the cost is."

Under the law, the governor will name a 19-member code council to review the code every three years. Legislators have already planned the first review for March. Elsewhere in the region, Texas's June adoption of the IBC for municipalities goes into effect January 1. Mississippi building groups are lobbying a statewide adoption of the IBC, but the legislature is not in session until January 3. *Angelle Bergeron, with Tom Sawyer*

Rebuilding slowed throughout Gulf region

Most aspects of recovery in New Orleans and the Gulf Coast seems to be losing momentum, a development that could meet with tragic consequences. Besides political discord and a lack of funding for preservation, here are more reasons:

New Orleans: Levees People and businesses scattered around the country can't commit to rebuilding in New Orleans because Congress is still unwilling to underwrite a multibillion dollar levee upgrade that would resist a Category Five storm. Large-scale private investment that would lure people back will probably not occur unless Congress writes the check. Nor will the levee investment make sense, it seems, if there is not a coordinated investment in reworking the entire lower Mississippi flood-control system. The levees will remain vulnerable if the river cannot flood lowlands and supply silt to rebuild fast-retreating coastal marshes and barrier beaches. The total price tag may hit $30 billion.

Gulf Coast: Flood resistance On the Gulf, repairs appear to be progressing more quickly, partly because the coast was not inundated as long as New Orleans. But an impasse to coastal rebuilding may arise as local governments resist provisional Federal Emergency Management Agency (FEMA) maps that vastly expand the territory in which structures may have to be made flood-resistant. In some areas, the maps require that homes be raised above storm surge waves as high as 20 feet. Those requirements raise the cost of rebuilding, and the increased cost is usually not covered by insurance or disaster aid. However, complying with FEMA requirements qualifies homeowners for federally underwritten flood insurance, which can be essential to secure a mortgage. Katrina's flood-insurance claims may reach $23 billion, perhaps triggering a congressional bailout of the flood-insurance fund.

Entire region: Housing FEMA's trailer program, to provide temporary housing in the region, has been slow to get under way, especially in New Orleans. With much of the city lacking basic utilities, FEMA has been unable to deliver trailers to peoples' properties because they need hookups. It has tended instead to create "FEMAvilles"—large encampments of trailers on open sites, often in remote locations, that the agency's contractors can more quickly supply with sewer, water, and electricity. Opposition has slowed the building of these enclaves because neighbors view them as instant slums, concentrating the unemployed and disconnecting people from schools, jobs, families, and social institutions. Meanwhile, FEMA's program of housing people in hotels while they relocate or rebuild was supposed to end November 30. After thousands failed to find temporary housing, the deadline was extended to December 15, and even January 7 for some. A federal judge told FEMA to continue the hotel program until at least February 7 for 42,000 more evacuee families. Almost 85,000 applications for aid were pending at press time.

The Enterprise Foundation, which devotes its efforts to affordable housing, says the federal government should commit $33 billion to fill the gap between total permanent housing losses (on the order of almost $87 billion) and the amount that insurance and other sources will pay out. Meanwhile, until now homeowner loans have been virtually nonexistent. *James S. Russell, AIA*

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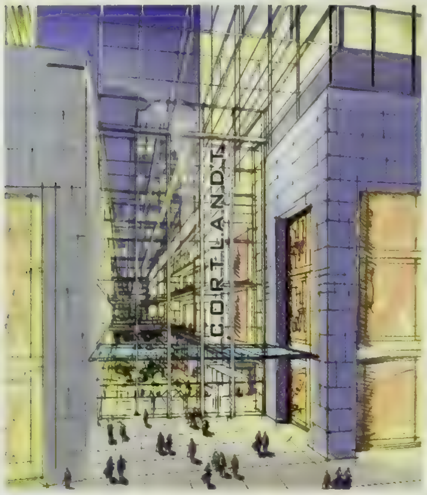
Progress moves slowly at Ground Zero as political power struggle heats up



The Port Authority's commercial space at Ground Zero would sit at the base of towers 1, 2, and 3.

This fall, progress on a few construction projects at Ground Zero continued to crawl, while the real action seemed to be in the offices of local politicians. New York City Mayor Michael Bloomberg appears to be getting ready for a fight with New York Governor George Pataki over the fate of proposed office space here. Meanwhile, the Port Authority of New York and New Jersey, which owns the property, continues to assert itself.

Work on Santiago Calatrava's transit station has just gotten under way, while the World Trade Center Memorial Foundation, which oversees funding on the memorial and cultural buildings, on December 5 announced that it had issued a request for proposals for a memorial construction manager. The toxic Deutschebank Building to the south is slowly being dismantled to make way for park and office space. On November 29, Goldman Sachs broke ground on its Pei Cobb Freed Partners–designed headquarters, just northwest of Ground Zero, and on December 15, developer Larry Silverstein announced that Norman Foster would build the third office tower at Ground Zero, on the eastern edge of the site, at 200 Greenwich Street. Completion is scheduled for 2011. That same day, the Lower Manhattan Development Corporation (LMDC) approved allocating $200 million in funding to the WTC Memorial and Museum.

But most dramatic is the developing struggle between Bloomberg and Pataki. During his first term, Bloomberg mostly deferred to Pataki regarding development at the World Trade Center site. He changed that stance in late October, just before his reelection, when he told the *New York Daily News* editorial board that he would prefer to see more residential development on the site. The site is now slated to include about 10 million square feet of office space. Bloomberg also told the board that the city would be better served by removal of Silverstein, who owns the right to build the Pataki-backed Freedom Tower. In mid-November, Bloomberg named six new members to the LMDC board of directors. Four of them are senior advisers to the mayor. Pataki subsequently appointed three of his backers to the board. The LMDC is a joint state/city corporation that oversees rebuilding in Lower Manhattan. Its board has 16 members, eight appointed by the mayor, and eight by the governor.

Pataki has since backed away from his long-held position that all of the space lost when the World Trade Center towers collapsed should be rebuilt, telling the *Post*, "I don't know that 10 million is the magic number. I'm not going to project where things might be with office space demand, in five, 10 years from now."

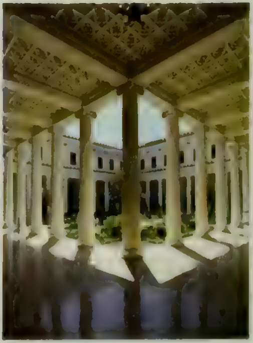
As the mayor and governor positioned themselves for a face-off, the Port Authority of New York and New Jersey (PA) has been flexing its own muscles. In mid-November, the PA said it will reduce the size of the chiller plant it is constructing to service the site. This means that Silverstein will have to construct his own chillers to service the Freedom Tower and other office buildings at the site, increasing the cost for his project reportedly by as much as $100 million. A few days later, the PA released plans to develop up to 550,000 square feet of retail at the Trade Center along Church Street, at the bases of towers 2, 3, and 4, which have yet to be designed. The development would replace the World Trade Center's original retail mall, which, PA chairman Anthony Coscia pointed out in a statement, "was one of the most successful in the country." At the same time, the PA offered to assume control of construction of the World Trade Center Memorial, and to cover any cost overruns. The offer would streamline building on the complex PA-owned site. But some point out that the WTC Memorial Foundation's fund-raising efforts would be hurt if the public perceives that the memorial's costs could be absorbed by the PA. Others say it would be unwise for the foundation to give up control over the construction, even as cost estimates have gone as high as $800 million. *S.L., with Charles Linn, FAIA*

Just Opened ...

Turning Torso, Malmo, Sweden This 54-story residential tower, designed by 2005 AIA Gold Medalist Santiago Calatrava, FAIA, features nine rotating box units that turn 90 degrees from base to summit. The rumor mill suggests that Calatrava will be asked to design a similar structure in Las Vegas.

Valencia Opera, Valencia, Spain Santiago Calatrava's opera house, located on the western edge of his massive City of Arts and Sciences in Valencia, is the complex's final piece. The spherical, white concrete design resembles a space helmet, and was completed this fall. Although its inaugural concert took place then, the building won't officially open until next year.

Getty Villa, Los Angeles The fabled Roman-style villa, which was the original J. Paul Getty Museum, reopens January 28 following a major renovation by Machado & Silvetti; SPF:architects served as the architect of record. The museum has a new mission as an educational center and museum dedicated to the study of the arts and cultures of ancient Rome, Greece, and Eritrea. The museum has new galleries, a new auditorium, a new outdoor theater, new office space, and is now seismically protected by a steel support system. *S.L.*



Turning Torso (left); Valencia Opera (above); Getty Villa (right).

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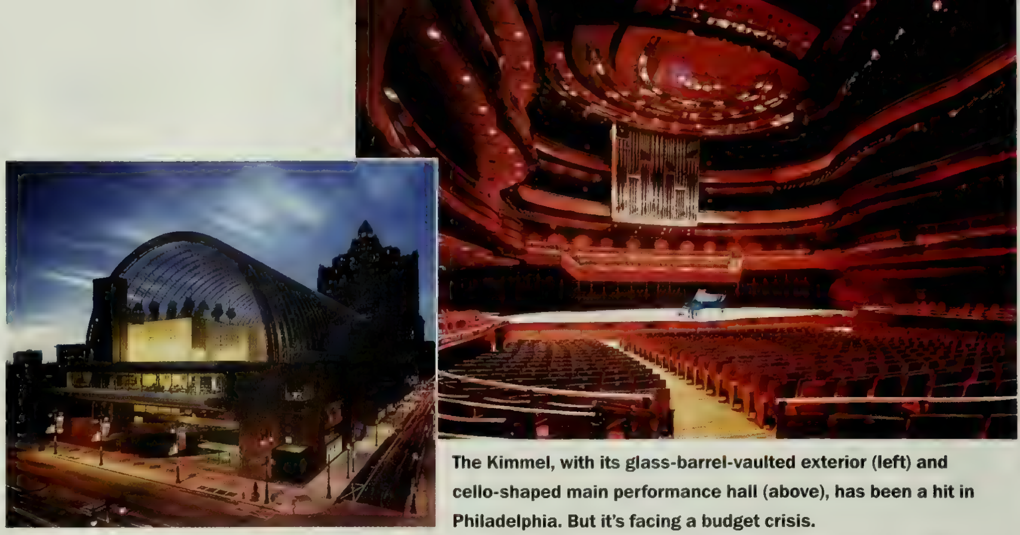
Viñoly sued over alleged Kimmel Center design flaws


The Kimmel, with its glass-barrel-vaulted exterior (left) and cello-shaped main performance hall (above), has been a hit in Philadelphia. But it's facing a budget crisis.

On a Friday night in December 2001, Philadelphians gathered to celebrate the opening of the Kimmel Center for the Performing Arts, the new home for their beloved Philadelphia Orchestra. But four years after the opening, the center is struggling to remain afloat with the burden of a $30 million bank loan debt: $23 million from construction overruns and $7 million from funding shortfalls.

To help alleviate the issue, the Philadelphia Regional Performing Arts Center, which manages the Kimmel, is suing the building's architect, New York–based Rafael Viñoly Architects (RVA), over what it alleges—in its 28-page complaint filed on November 23, 2005, in Philadelphia's United States District Court offices—are costs resulting from "deficient and defective design work" at its hands.

The complaint concludes that "most, if not all, of the cost overruns" were "the result of [Rafael Viñoly Architects'] performance on the project." It states, "The construction cost $180 million, which was significantly more than the $157 million originally budgeted for construction."

Costs shot up, the document says, when steel erection was delayed by 16 months, threatening the center's long-planned opening. The shorted time frame prompted overtime filings from workers, and costly charges for expedited manufacturing services.

The complaint alleges that documents were late, inaccurate, and incomplete; that design work was inadequate; and that equipment underperformed and required repair or replacement. The complaint states that RVA broke its contractual promise to correct—at no cost to the Kimmel—any defects in design or in specification.

Because the case is still pending, neither party would comment directly on the matter. Viñoly's office released a statement saying that it was "extremely disappointed" by the complaint, adding, "The same people who praised the building are now criticizing it. We feel the claim is unsubstantiated."

The 425,000-square-foot, glass-barrel-vaulted performing arts center, which contains three theaters, is located on Broad Street in Center City Philadelphia. Today, the center—which has spearheaded a transformation of Philadelphia's cultural life and civic identity—struggles to pay the $2 million annual bank loan fee servicing the $30 million debt from construction overruns and from falling short of fund-raising goals. A December 14 story in *The Philadelphia Inquirer* noted that this debt is compromising the center's ability to amass an endowment and develop top-level programming.

The case goes to trial on January 28, 2006, and comes after the Kimmel's 30-month effort to resolve the matter with RVA failed (an effort it charges in the complaint that the firm stalled by its delays in attempting to find counsel). The suit could open up many issues about an architect's financial and legal accountability for construction overruns.

Joseph Dennis Kelly II

Architect starts "university" in his offices

Rafael Viñoly (discussed in the story above) has developed a 14-week training course for architecture students and young practitioners. He is teaching it from his office.

The course, which began in September with two-hour weekly sessions, attracted 53 applicants worldwide. Viñoly handpicked the 19 participants, who range from students enrolled in architecture schools to architects starting their own practice, based on the quality of their portfolio and applications. The participants are not employed by Viñoly and do not pay a fee for the course.

Why would an architect, with a busy schedule and projects around the globe, take on such a course? "There is a need to address the questions of people coming into the workforce, to offer a pragmatic set of techniques that can be explained and taught," says Viñoly.

The course covers topics including strategic thinking, getting and executing projects, the design process, recognizing architectural ideas, self-criticism, time management, defining an ideological base, and positioning a practice. The program is an opportunity for Viñoly, who has taught at Yale and other schools, to teach within the setting of his office rather than in university studios that seem far removed from practice. Frances Gretes, director of new business for Rafael Viñoly Architects, observed, "He learns a lot when he teaches. He has really articulated a lot of his philosophy (in the course)."

Viñoly expects to conduct the program annually. More information on the course is available at the Web site, www.rvatr.com. ***John E. Czarnecki, Assoc. AIA***

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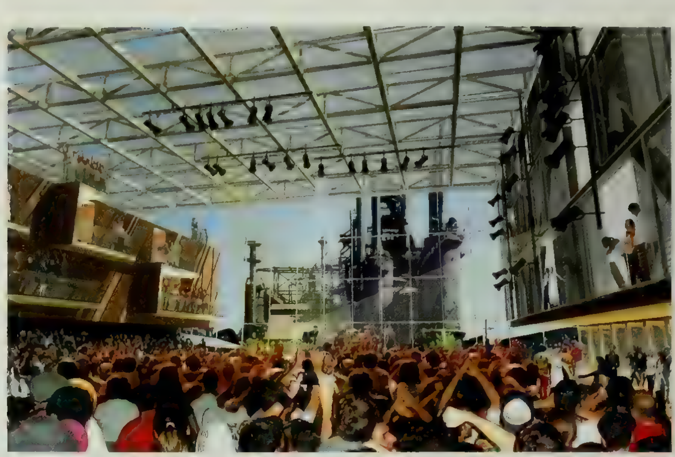
Bethlehem group hopes to develop arts center within city's old steel mills


The Festival Hall would seat up to 3,000, with the mills as its backdrop.

In 2003, the once-great Bethlehem Steel Company closed its doors for good, ending, some said, the industrial age in America. Now, those doors may open to the age of culture, as a proposal is being developed to make the steel mills the backdrop for a new city arts center called SteelStax.

The 200,000-square-foot facility, designed by New York–based Rockwell Group with Boston-based Design Lab Architects, will be woven in, under, and around the monumental mill structures. A 50,000-square-foot Festival Hall, which will seat up to 3,000 people for music and large events, will use the main blast furnace as its backdrop, revealed via a glass curtain wall at the back of the facility. Other venues will include a 500-seat performing arts theater, a 300-seat music venue, and 25,000 square feet of performing arts education space.

The project is being developed by the local nonprofit cultural foundation Artsquest, the Pennsylvania Youth Ballet, the Pennsylvania Youth Theater, and the Hispanic American League of Artists. The 3.5 acres of land for the project was donated by BethWorks Now, a developer that is hoping to build a commercial and residential complex on the mill site. No funding has been secured, but the team has assured seed contributions from local donors, and hopes soon to attract government arts grants. Officials say they cannot discuss the project's price tag at this point.

Rockwell Group principal David Rockwell says the buildings, mostly cubes (although he's not "ruling out anything rounder"), will feature a similar industrial aesthetic to the mills; they will be clad in both steel and masonry, for instance. They will not, however, try to compete with the size and scale of the gargantuan mills, which Rockwell likens to the "Grand Canyons of industry."

Building next to the massive furnaces and forges of these industrial icons will present some challenges, Rockwell acknowledges. Much of the project is adjacent to an elevated train track that runs through the mills, and the buildings will likely be elevated to lessen vibration issues.

Rich arts scene in Bethlehem

In recent years, the arts community has taken off in this town, known for so many years for its steel production. ArtsQuest president Jeff Parks says that the city already has 1,200 arts students taking part in arts after school and summer programs. His organization's "Banana Factory," an old distribution facility turned arts facility, holds space for artists' studios and performing arts groups, while "Summerfest," a yearly festival, hosts 500 bands and about a million people per season. Much of Summerfest's performances would take place in Steelstax, says Parks.

Completion is set for 2008. Rockwell admits this is an ambitious date, but people in this once-great steel town are eager to move forward, especially after plans for such a facility have stalled numerous times. BethWorks Now is currently on hold pending a state decision on whether to allow gambling on the site. The mills themselves are set for renovation, a separate project that is still in early discussions. *S.L.*

Architects create animal shelters in Pakistan earthquake zone

Earthquake refugees in Balakot, Pakistan, cannot protect livestock.

In the aftermath of the devastating earthquake in Pakistan and India last October, Architects for Aid (A4A)—an organization that helps improve the design and management of disaster shelters—recognized that since many of the area's inhabitants are dependent on animals to survive the winter, destruction of livestock shelters and veterinary facilities could worsen the crisis. The organization joined with the World Society for the Protection of Animals (WSPA), and in late November sent Sam Price of London's UV Architects to Pakistan to develop prototype animal shelters.

Together, the parties developed small, lightweight frame structures designed for easy transportation, fabrication, modification, and replication. About 20 have been built so far. Using readily available materials, such as corrugated galvanized iron for roofing; woven grass reed or canvas for walls; and reclaimed rubble for foundations, the structures provide animals with protection and insulation. They also ventilate the heat produced by larger animals. The shelters are designed to hold up to three buffalo, eight sheep or goats, one horse, and 20 chickens.

While dispatching more volunteers for the animal shelter project, A4A, which was formed in 2004, is working with organizations such as the U.N.'s Habitat and Shelter Center and Registered Engineers for Disaster Relief (RedR) to promote disaster-preparedness among architects. On the whole, the field has been criticized for its slow response to events like the Southeast Asian tsunami and Hurricane Katrina. Consequently, A4A has begun creating a registry of trained professionals ready to travel to disaster sites as well as an online repository for knowledge on structural emergency work.

"The life cycle of a humanitarian aid worker is often about 5 years, so there is an inevitable relearning process that must regularly occur. This should be mitigated and the expertise retained," says Dr. Victoria Harris, managing director of A4A. More information is available at www.architectsforaid.org. *Nick Olsen*

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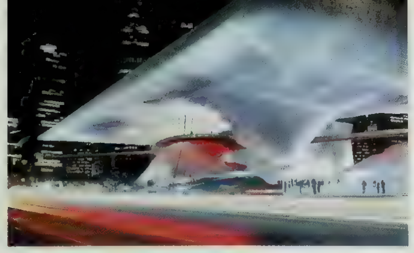
Coop Himmelb(l)au directing cinema complex in Korea

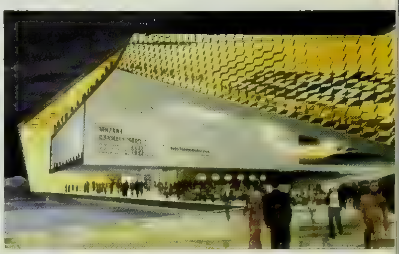


The Pusan International Film Festival has selected Austria-based Coop Himmelb(l)au to design its 430,000-square-foot PIFF Cinema Complex and urban plaza in Pusan, South Korea. The firm, led by architects Helmut Swiczinsky and Wolf D. Prix, envisions a structure with a swooping, metal-clad roof imbedded with a LED smart skin on both sides, acting as film screens. Images can be projected from below for visitors inside the complex to view, but also from above so they appear on the roof for viewers to see from surrounding structures.

The "flying building," as Prix calls it, will include six cinemas, an exhibition hall, and an entry plaza that allows guests to arrive by boat. The project will also include a valley, a small canal park, a red carpet zone, and a walk of fame.

Coop Himmelb(l)au completed another Cinema Center, the UFA Center in Dresden Germany, in 1998. This will be the firm's first Korean project. Construction has not begun, but Prix is planning to have the center completed in time for the 2007 film festival. *Sarah Cox*

Henning Larsens Tegnestue building concert center on fishery site



In Reykjavik, Iceland's waterfront, violin strings are replacing fishing lines. This fall, the city (along with the national government) selected Henning Larsens Tegnestue in an invited competition to design the Icelandic Congress and Concert Centre, on the site of a decommissioned fishery.

The 250,000-square-foot building comprises an 1,800-seat concert and a 450-seat rehearsal hall, as well as a conference room holding 750 people. The spaces are contained in two irregularly shaped volumes that follow the path of the shoreline.

Concertgoers will approach via a curved path intended to shield them from Faxaflói Bay's whipping winds. Extensive glazing in the multilevel foyer will provide views of the city, Mount Esja, and the glacier at Snæfells Jökull. Other elevations will be clad in prisms and mirrors that reflect changes in weather and interior lighting. The facade is being designed by artist Olafur Eliasson, who collaborated on Larsen's Copenhagen Opera House.

Just outside, a new public plaza will feature cauldrons of geothermally heated water, enshrouding the crystalline structure in steam.

The commission is part of a $190 million redevelopment of the East Harbor district. The hall is scheduled to open in 2009. *David Sokol*

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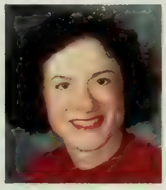
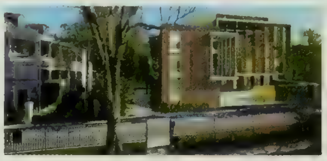
AIA names first female C.E.O. Christine McEntee has been named the AIA's first female executive vice president and chief executive officer, succeeding Norman L. Koonce, FAIA, who retires on December 31. McEntee, whose tenure becomes effective February 1, 2006, formerly served as C.E.O. of the American College of Cardiology. She is credited with increasing that organization's revenue by $18 million annually and growing membership to 33,000 during her seven-year term.

"I am extremely energized to be working with such a dedicated cadre of professionals who are deeply committed to making lives better through spaces and environments," says McEntee. Koonce, her predecessor, who had been AIA C.E.O./E.V.P. since 1999, wanted a break to turn his attention to issues of "exploring the power of architecture to elevate and enrich the human experience," while also spending more time with his family. Koonce established closer working relationships between local, regional, and national AIA components, and increased association membership 12 percent, to 74,000 in 2004. *Tony Illia*


New AIA C.E.O. Christine McEntee.

Modern building draws ire in Charleston Boston-based Kennedy + Violich Architecture's design for the new Clemson Architecture Center in Charleston, South Carolina, has drawn intense criticism from preservationists and neighborhood activists. One letter to the *Charleston Post and Courier* said the building's design "is obviously copied from one of the worst periods in American architecture, the 1960s."

The satellite campus building, located in the historic Ansonborough neighborhood, includes gallery, classroom, and studio space for design students. The city's Architectural Review Board has supported the design, though final approval isn't expected until March. Clemson's archtiecture dean, Janice Schach, says that Clemson understands the traditional atmosphere in Charleston, and hopes to enrich preservation dialogue. "We're willing to be flexible on form, height, massing, and materials, but we will not mimic historic styles," she says. *Alan G. Brake*


A rendering of Clemson's Architecture Center in Charleston (above, at right).

Agreement with international architects At the Architects Council of Europe (ACE) General Assembly, held in Luxembourg on November 18 and 19, ACE, the National Council of Architectural Registration Boards (NCARB), and the AIA signed an agreement for "mutual recognition of professional qualifications between architects of the European Union and the United States." With such recognition, says Ellen Delage, AIA director of international relations, qualified U.S. architects with at least seven years of substantial post-licensure experience would be considered eligible to apply for a license to practice in Europe (and vice-versa). The agreement comes after about five years of negotiations between the signatories. It is the first mutual recognition of professional credentials to be signed between representatives of the E.U. and the U.S.

ACE has ratified the agreement; AIA officials expect that the NCARB and AIA boards will ratify it later next year. Then, a final legal agreement would be negotiated for adoption by the European Commission and U.S. jurisdictions. *S.L.*

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For and about the emerging architect

archrecord2

We begin the year with concepts that define future ways to work as architects and at home. First, in Design, a trio of architects is pooling their resources under an umbrella called Flux, offering clients multiple brainpower for innovative design. Then, in Work, we give a hearty nod to appliance giant Electrolux, who is challenging students worldwide to design home appliances for the future.

Design

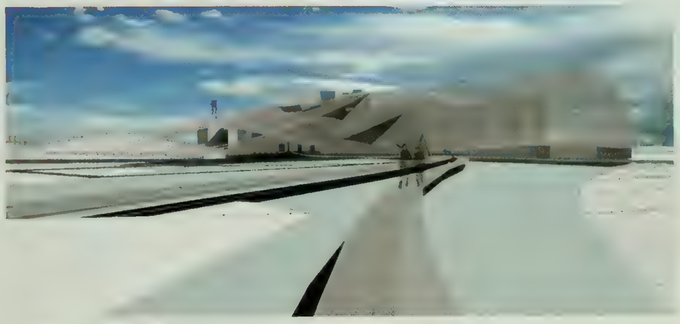
Flux: Three heads are better than one

Architects Michael McDonald, Darin Johnstone, AIA, and Scott Parker (left to right, at left) were busy working on individual projects and teaching at SCI-Arc and other colleges in Los Angeles when these pages inspired them to take their endeavors a step further, or, rather, a few steps closer together. "We saw that many of the Vanguard firms were collaborations," says Johnstone. "We were working that way anyway, and that became the impetus to create Flux as an umbrella for a body of work created under a series of partnerships involving the same key players."

Pooling knowledge has given the three architects a wealth of resources to draw on, a larger portfolio, and a fresh enthusiasm for finding new work. As solo practitioners Johnstone and Parker have collaborated as delineation.spatial design and Johnstone Parker Architecture, while Johnstone also works alone as Darin Johnstone Architecture, and with McDonald as Johnstone+McDonald Architecture. McDonald runs architecture/industrial design firm Park-McDonald with his wife Alice, and Parker works for Los Angeles firm Bauer and Wile. If that weren't enough, the three architects, as Flux, have even approached a business owner to invent a project. "It almost turned into real work for us," says Parker. "Our pretend client decided to expand, and at that point our designs became valuable investigations." Although that particular project never got legs, Flux has attracted the attention of some real clients, including giant urban planning and landscape architecture firm SWA Group, which became interested in finding out what three talented designers can do when they put their heads together. SWA Group is creating a 1-million-square-foot development on a small island between historic Qingpu Island and Zhujiajiao off the coast of Shanghai—a project that could potentially serve as a kind of cultural hub for the region. Flux was asked to adapt an old cement factory in the area, and soon became involved in a larger zoning strategy that calls for a park, residential district, and a cultural center in the rehabilitated factory.

"Projects have come to us through random introductions," says McDonald, who with his partners admits that partnerships, affiliations, collaborations, and skills have ebbed, flowed, and emerged into the coherent body of work that is Flux. "More of the same randomness would be ideal," says Johnstone. *Ingrid Spencer*

For more information on Flux, go to archrecord.com/archrecord2/



Qingpu Cultural Center, Shanghai, China, conceptual design
An adaptive reuse of an abandoned cement factory on a triangular island expanded to a strategy to develop a park, residential district, and cultural center.

Qingpu Pagoda Park, Shanghai, China, bidding
Four pavilion/teahouses in a park surrounding a 100-year-old pagoda are nodes along a path, orienting visitors toward the pagoda, which is a vertical moment in a horizontal context and serves as a marker along a water gateway to the district.

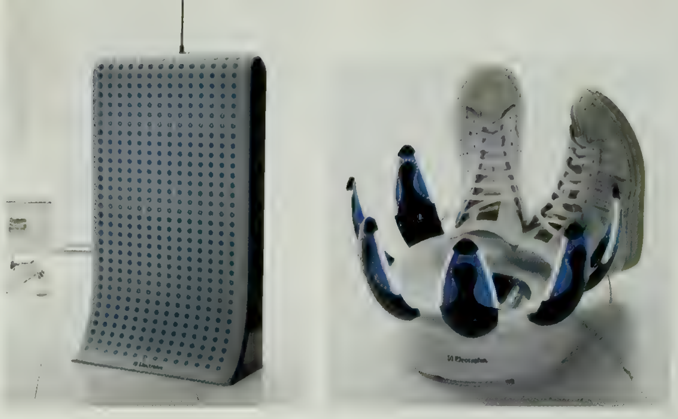
Drop, Hi-Lo Fielding, Los Angeles, 2004
A gallery installation at SCI-Arc, this project encourages indeterminate spatial experiences from interactions with drop-ceiling units, which changed according to options executed in series and by chance.

Work

Students envision appliances of the future

"One of the biggest mistakes a company can make is to stop listening," says Henrik Otto, global design director of Electrolux—the world's largest manufacturer of home appliances. Indeed, since 2003, this Stockholm-based corporate giant has sponsored a competition inviting design students to submit their visions of future home appliances. "Students don't have preconceived notions as to what you should or shouldn't do," says Otto. "Consequently, they throw us into new thought processes." Initially a European initiative, Electrolux Design Lab 2005 attracted 3,058 entries from over 88 countries. Their challenge was to create a total appliance concept for the year 2020 based on evolving consumer needs and trends. Twelve finalists were selected to develop their ideas—produced as prototypes by Electrolux. The group was then hosted at a series of events in Stockholm concurrent with an exhibition at the *Future Design Days* conference in November, where the winners were announced.

Modularity, adaptability, sustainability, and compactness were the salient principles inherent among the final dozen—all worthy candidates for the top prize, according to Otto and fellow judge panelists New York MoMA curator of architecture and design Paola Antonelli; kitchen designer and architect Johnny Grey; creative consultant Ilse Crawford; Bentley head of exterior design Raul Pires; and C.E.O. of China Bridge International Cathy Huang. An "Electro/House" kit from Colombia, Digital Placemats from Brazil, vacuuming slippers from Spain, and an odor-removing Oxygenating Coat Hanger from the U.S. were among the unique solutions.



Winners were Airwash *(above left),* The Flavor of Sunshine *(far left), and* Happy Feet *(above right).*

Ultimately, an innovative *Airwash* clothes-cleaning system, by Wendy Chua and Gabriel Tan from the National University of Singapore, captured first prize for its sleek, intuitive format and no-chemical/no-water approach to fabric care that could eradicate traditional dry cleaning. *The Flavor of Sunshine*, an aesthetically balanced washer/dryer combo by a team of Chinese students from Zhejiang University landed second place for its ability to wash, spin, and "sunbake" clothes dry through a nature-simulating process. Third prize went to *Happy Feet*, a device purporting to remove odors, and clean and sterilize the inside of shoes and sneakers, by students at Korea University of Technology and Education in South Korea. *Linda C. Lentz*

For finalist information and to find out how you can participate in the 2006 Electrolux competition, go to archrecord.com/archrecord2/

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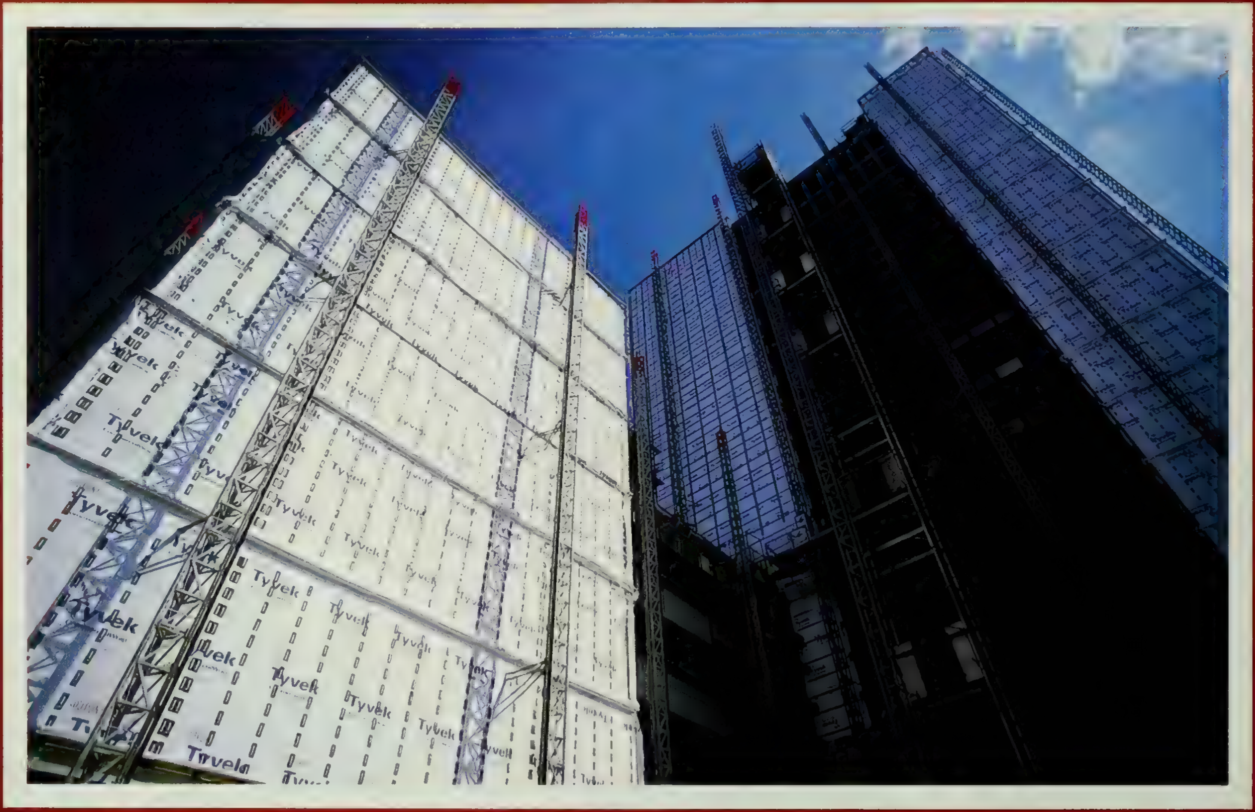

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New Orleans does not look as bad as you think—it's worse

Correspondent's File

Story and pictures by Sam Lubell

New Orleans
November 10–12, 2005

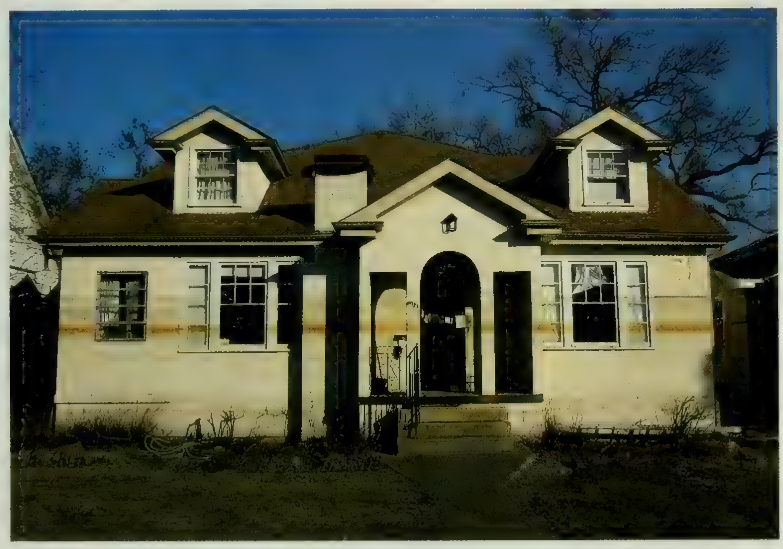
I'm in New Orleans for the Louisiana Recovery and Rebuilding Conference, a gathering organized by the AIA, the American Planning Association, and other organizations to discuss the state's development in the aftermath of Hurricanes Katrina and Rita. More than 650 participants share their perspective on topics such as building new levees, developing mixed-income communities, and saving historic properties. The discussion, which takes place at the Marriott on Canal Street, in the Central Business District, is good, but after a few hours, I decide it's time to get out and see what we're talking about.

The scene outside couldn't be more different than the grand ballrooms and seasoned lecturers at the conference. Throughout the city, there is an empty, crippling stillness. Much of the place in mid-November, almost three months after Hurricane Katrina, still feels frozen in time, like Pompeii. Tree limbs still litter the sidewalks as if the storm had just occurred. Some homes are decimated, but most are still standing and look fine from the outside, except for some broken windows. But inside, they're a wreck; possessions are completely gone or are scattered like junk.

The best measure one gets of a home's fate is the height of the orange-tinted waterline on its facade. The line sometimes reaches below the windows, and in other cases sits below the eaves. The longer the water sat at that level, the darker the streak is. Sometimes, I can see the line easing upward, like marks parents make on a wall to track their child's growth. Whether many homes will be saved has not been determined, so the buildings sit in an uneasy limbo. And while they stand, they're lifeless without occupants. There is virtually no one in two thirds of New Orleans. I realize I'm a tourist looking at what was once a great city.

The only activity is the work of those clearing junk from houses. Trucks and forklifts are hauling mattresses, family albums, lamps, trees, and whatever else into gargantuan piles. Along Canal Boulevard, which has become a giant garbage dump, piles reach up to 30 feet high, with front-loaders working on top. Inside, homes are either gutted—owners got to them before the mold took its destructive toll—or smell like an old bathroom. Most homes are marked with yellow and red Xs and numbers, signifying, I've been told, either that the house must be demolished, or that its fate is in question, or that it is salvageable. In some cases, the marks remain from just after the storms, signaling that the residence has been checked for bodies.

Driving east on St. Claude Avenue in the Lower 9th Ward, one first has the illusion that things aren't so bad. But inside any house or business, the sense of destruction is overwhelming. At an old burger joint, the flies and the intense, unbearable



Orange waterlines are sometimes the only clue to the devastation inside homes and buildings. Canal Boulevard, near City Park, has been turned into a giant trash dump.

smell of rotting food dominate. Many of these buildings will be knocked down. Poorer owners don't have flood insurance and could never afford to renovate their homes. The fate of those owned by wealthier landlords is also in doubt. It seems unlikely that some of these neighborhoods can be saved. I can't help thinking what this destruction would mean. Just as an empty home is lifeless, this city without its architecture would be soulless, heartless, without an identity.

There are so many beautiful shotgun homes here, covered with bright yellows, purples, greens—raised cottages with intricate wood and masonry work. Gorgeous Victorian mansions are marked with the same yellow and red Xs, the same orange waterlines. Early reports had said that only the poor were affected, but these sad markers also show up in wealthy Lakeview, near Lake Pontchartrain, in Mid-City, and in Gentilly.

Near the 17th Street Canal, in the city's northwest, the devastation caused by the hurricane is more obvious. A real storm came here! More garbage, scattered in every direction; imploded homes; cars somehow thrown through front doorways. City Park is brown, not its usual green. Trees with roots the size of people have been ripped from the ground.

Driving on Canal Street that night, I see that electricity has returned, but National Guard Humvees and police cars line most intersections for safety. Areas just outside here are pitch dark, and 8:30 at night might as well be 2:30 in the morning. I lose track of where I am while driving with a friend west toward Rock N' Bowl, a newly reopened nightspot in Mid-City. People at the bowling alley, where the few working lights, run via generator, tend to flicker, tell me to pray for them.

Views near the 19th Street Canal, in the city's northwest, resemble a bomb's aftermath (top). Elsewhere, a home is being gutted and repaired (bottom).

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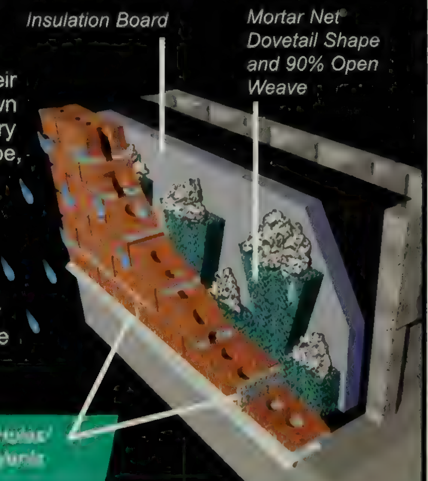
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They're resilient people. Only the ones that really want to be here will stay. This will be a smaller city in the future.

The French Quarter, mostly spared, is quiet the next day. Only a few tourists walk the empty streets, passing migrant laborers looking for work rebuilding or cleaning up. Bourbon Street looks like a stage set. On Canal, most stores are still boarded up. Some are difficult to discern from the rubbish piles outside them. City Hall, a clunky Modern building, is also covered with plywood. On Wisner Boulevard in Midtown, the scent of rot and mold is everywhere.

And it goes on, mile after mile after mile. After a while, it becomes numbing. I want to close my eyes. It's difficult to return to the conference. Attendees there discuss zoning, land use, and aesthetic integrity, but I have trouble imagining how leaders will be able to clean up all the trash, let alone rebuild this place. A few people are beginning to rebuild their homes, but these structures will be lonely islands in a sea of destruction. Surely, their owners won't feel safe from crime, or from another hurricane.

Safety, and new development, will only come through levees strong enough to withstand a category five storm. Nobody will build, lend, insure, or do anything without these. The levees near lake Pontchartrain, the huge earthen mounds, are fine, but those nearer the worst-hit neighborhoods are barely patched up with sandbags. Experts hope the levees will be returned to pre-Katrina levels by June. But that won't be enough. The price tag for proper levees has been quoted at around $30 billion. Yet, there is no clear sign that Congress has any intention of paying this bill. The rebuilding could cost up to $200 billion, the experts are saying. It could be another 25 to 50 years before this place gets back to normal.

A symbol of hope or of devastation?

The smart, idealistic notions being passed around at the Marriott, familiar to those who have attended past AIA or APA conferences, seem removed from reality. They mean nothing if leadership doesn't find a way to work together, and if money doesn't arrive. Louisiana Senator Mary Landrieu says the federal government keeps most of Louisiana's annual offshore oil and gas revenues. The state should be able to hold on to more for rebuilding (but not for unnecessary pet projects). New Orleans Mayor Ray Nagin didn't show up for this conference, and the city held its own meeting with the Urban Land Institute a couple of days later. There is no leader here. Meanwhile, specific questions that no one wants to answer must be answered very soon. The fate of historic buildings must be decided now or even fewer will be salvageable. Homes will need to be condemned to make way for bigger levees and improved wetlands. If homes can't be built on low ground, they must be cleared to make way for new development. The life has to return to the city, and it could take a miracle to do it. But for now, that life is gone, and New Orleans remains still. ■

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Worlds apart: Architects and the public talk past each other

Critique

By Robert Campbell, FAIA

"What can we do?" asks a member of the university's Board of Visitors. "The students and alumni hate all the buildings the architecture professors like, and the architecture professors hate all the buildings the students and alumni like."

You can't put the case more clearly than that.

The school in question is the University of Virginia. Recent buildings there, both those completed and those proposed, are often designed in imitation of the manner of Thomas Jefferson, who of course did the original campus.

That situation prompted a protest in September. Thirty-four faculty members, most from the School of Architecture plus a few others, signed a letter to the Board of Visitors and the rest of the university community.

It's worth reading. Some excerpts:

"The University is heir to Jefferson's progressive vision of education, created to accommodate the challenge of a new democracy and to address the unique American landscape.

"Why has this legacy of innovation in service of ideas been allowed to degenerate into a rigid set of stylistic prescriptions?"

The letter goes on with a series of questions:

"Is there not a difference between buildings that merely look Jeffersonian as opposed to the infinitely more difficult task of being Jeffersonian?

"Is UVA to become a theme park of nostalgia at the service of the university's branding?"

Branding, of course, is a buzzword of the moment. When they say "branding," the writers are alleging that UVA is selling itself like cereal by promoting image rather than substance.

I have good friends among the faculty at Virginia, and I once served as a member of the school's advisory council. But I think the faculty letter is for the most part silly. Too much of it is a pastiche of verbal clichés. They're at least as unoriginal and annoying as the pastiche of architectural clichés they're complaining about.

18th-century branding

There's one big problem with the faculty's thesis. Thomas Jefferson—along with his too-often-unsung collaborator, Benjamin Latrobe—was branding all over the place.

Jefferson grabbed brands from Greek and Roman porticoes, from Palladio, from Georgian England, from the Pantheon. Why did he do this? Because he wanted to speak an architectural language that the public could understand. And a language, almost by definition, is a collection of agreed-upon conventions. It is understandable only when it stays in touch with tradition. If a language changes too fast, if it's too revolutionary and inventive, it becomes incomprehensible, at least without special study. That's why nobody speaks Esperanto.

What was Jefferson saying with his brands? The message is pretty obvious. He was using his imagery to announce that his university was a civic and public presence, neither domestic nor utilitarian, and that it would (among other things) respect and promulgate the wisdom of the past. Could he have said that as well in some newly invented manner? No.

Jefferson knew, too, that you can make your points by violating convention, if there's a convention to violate. This child of the Enlightenment provided his university with no chapel, installing a library as the focus instead. He left his campus, at one end, open to the horizon, suggesting that it—like America—was only a beginning. He linked his formal campus to the farmland and wilderness beyond with a system of gardens. He built with simple vernacular materials, wood and brick, the materials of a pioneer, rather than the stone used for public buildings in Europe. In all these ways, he was a remarkable architect. But that doesn't mean he wasn't branding. Of course he was. Like mad.

Karen Van Lengen, the dean of the school, tells me over the phone that the purpose of the letter was not to dictate any style, but rather to begin a conversation between the architecture school and the rest of the university. She's right, of course, in believing that such a conversation doesn't happen on most campuses. And the letter certainly

With his design for the University of Virginia, Jefferson took brands from the Classical canon because he wanted an architecture people would understand.

Contributing editor Robert Campbell is the Pulitzer Prize–winning architecture critic of The Boston Globe.

did get people thinking. If you've got a few spare hours, check out the debate at www.uva-architecture-forum.org/openletter.html.

I come back, though, to that anonymous member of the Board of Visitors. What, exactly, can he or she do?

Tear it down! Tear it down!

As I write, TV station Channel 4 in London is about to air its long-awaited series entitled *Demolition*. Early in the year, the station asked its viewers to nominate the worst building in Britain. More than 10,000 people nominated more than 1,000 buildings. When the four shows run, in late December, a panel of experts will look at the buildings that made the short list, and will argue with one another about which should be chosen for demolition.

Demolition was originally supposed to air on a date that would coincide with the announcement of the James Stirling Prize, which is given to the best British building of the year. No doubt, the joyous hope of the show's promoters was that the same building would win both the Stirling and the demolition vote, thus proving that architects and the public, like the alumni and professors at UVA, live on separate planets. As it turned out, however, the Stirling was awarded in October to the new Scottish Parliament complex by Barcelona architects Enric Miralles and Benedetta Tagliabue. The winner on *Demolition* has yet to be named. Rumor says that the Parliament is among the contenders, but it's only rumor.

Demolition is the idea of George Ferguson, current president of the Royal Institute of British Architects (RIBA). Ferguson argues that along with preservation laws to protect good buildings, there should be an "X list" of buildings that ought to be torn down. Listen to the RIBA's Web site:

"The proposed X-list will identify the worst buildings in Britain. They will be buildings and structures that are judged by popular and expert opinion to be beyond redemption. X-listing will give planners powers to refuse change of use and to grant beneficial permissions for replacement. It is also proposed that there is a grant fund, vested in English Heritage, to help tip the balance in favor of demolition and appropriate replacement in particularly deserving cases."

Ferguson, of course, was assuming that only buildings disliked by the architectural community would be demolished. But as we've noted, opinions can differ. Take the Tricorn Center in Portsmouth, a parking garage-cum-shopping center. In an unrelated vote in 2001, it was chosen Britain's ugliest building by the general public and was promptly approved for demolition. (I don't know if this has occurred yet.) But according to a press report at the time, the Tricorn, completed in 1964, "enjoys cult status among architecture students as a classic of the 'new brutalism' style." A replay of Virginia?

THE JOYOUS HOPE OF THE SHOW'S PROMOTERS WAS THAT THE SAME BUILDING WOULD WIN BOTH THE STIRLING PRIZE AND THE DEMOLITION VOTE.

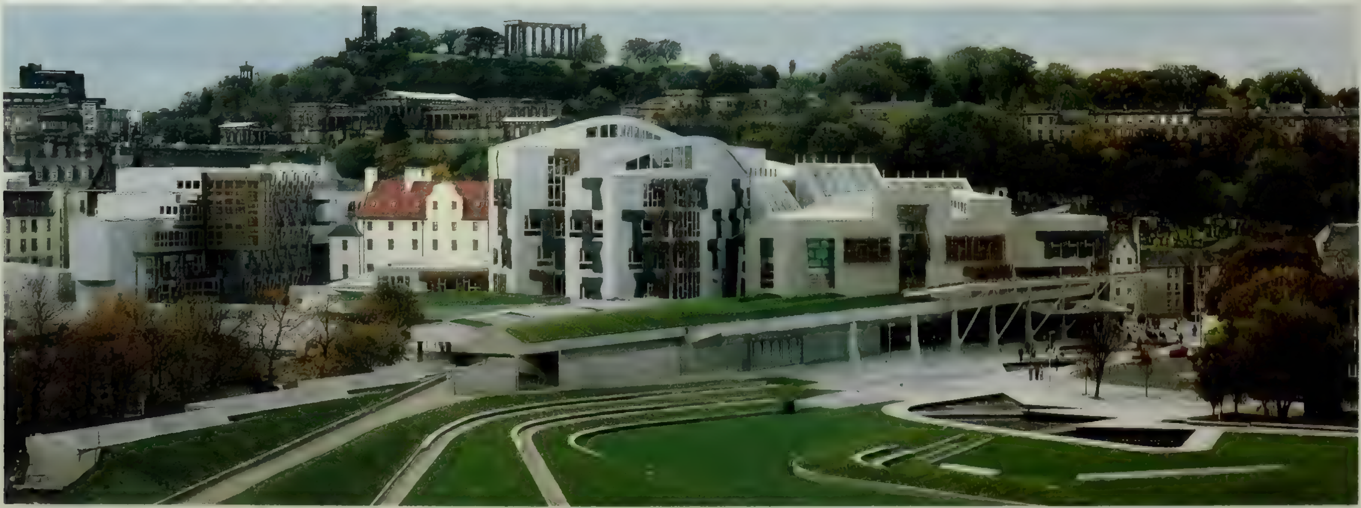
Design as a contact sport

The British talk about architecture less politely than Americans do, just as they watch their soccer games less politely. Prince Charles described the Tricorn as "a mildewed lump of elephant droppings." You don't have to admire the Prince to admit that he was undoubtedly stating a majority view, although not the view of architecture students. One wonders if he's read the nominations for *Demolition*, one of which proposes to blow up Buckingham Palace because it's too old and dowdy "for Queen Camilla."

The architect of the Tricorn is Owen Luder. Luder is a former president of the Royal Institute of British Architects, the position George Ferguson holds today. (Are these ironies getting out of hand?) If you've got an ear for architectural cliché, Luder is music. He says his creation "pushed back the frontiers" of style. (I guess he means "extended the frontiers.") It was "an architectural statement about the early 1960s." It was "a 'gee whiz' building, not a 'so what' building."

Some argue that it's unfair to let the public make judgments like those of the *Demolition* shows, because public taste is fickle. Fickle it may be, but the taste of the architectural community is more fickle. How long did it take our leaders to get through PoMo, Deconstruction, Blob, Excavation, Fractals, Modern Revival, and several more? Now the talk is of Green and Iconic.

Two places, Virginia and Britain. Both are reasonably civilized. In both, there's a frightening gap between the taste of an architectural elite and that of the larger public. The good news is that everyone is arguing about architecture. The bad news is that we'd make a pretty good subject for a Monte Python sketch. ■



Love it or hate it, the Scottish Parliament in Edinburgh by Miralles and Tagliabue has become one of the most talked-about buildings in Europe.

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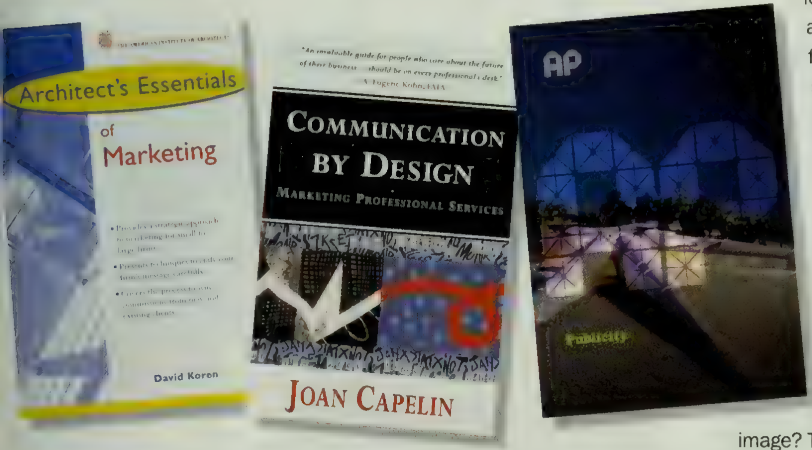
Marketing tips and titles on museums, photography, and cities

Books

Architect's Essentials of Marketing, *by David Koren. New York: John Wiley, 2004, 288 pages, $34.53.*

Communication by Design: Marketing Professional Services, *by Joan Capelin. Atlanta: Greenway Communications, 180 pages, $34.95*

Is It All About Image?: How PR Works in Architecture (Architecture in Practice), *by Laura Iloniemi. New York: Wiley-Academy, 2004, 224 pages, $55.*


Architect's Essentials of Marketing
David Koren
Communication by Design
Marketing Professional Services
Joan Capelin
AP
Publicity

Architects can't be players in today's competitive climate unless they can market their services successfully. These three books define terms and suggest efficient applications of marketing methods.

In *Architect's Essentials of Marketing,* David Koren, the marketing director for Gensler in New York, provides a quick, comprehensive tutorial for setting up a firm's marketing strategy. His straightforward book demystifies the profession's lingo and walks the reader through the major tasks of developing a marketing strategy: creating a mission statement, vision statement, and action plan; defining the firm's identity and position in the market; and allotting and managing a marketing budget.

Koren stresses the importance of gaining clients' trust and notes that their choice of architect often depends on intangible qualities such as individual chemistry, personality, and passion. He emphasizes the need for architects to be proactive and know their clients' needs. The key, he says, is to make marketing a regular part of the firm's work, continuously evaluating what strategies work for getting new business and publicity, and which methods need tweaking. Boldly labeled sections make the book easy to navigate; charts, graphs, and a bibliography and index add helpful information.

Joan Capelin's useful book *Communication by Design* is a quick read offering kernels of wisdom in conversational prose. Capelin, a long-time public-relations executive, organizes her book into 29 short, catchy principles, peppering her narrative with anecdotes and quotes from architects. The tone of her book resembles that of a wise aunt freely sharing her advice: Be proactive and maintain good communications among all those involved in a project; anticipate possible glitches and ask questions ahead of time; be straightforward about mistakes and correct them; always follow up; and celebrate small achievements. Capelin offers exercises for implementing her principles, and also provides tips for fine-tuning presentation skills. This small, easy-to-carry book makes a good motivational read on the way to a conference or meeting.

Is it all about image? That's the question Laura Iloniemi asks at the start of her richly illustrated book of that title. Unfortunately, she never answers it, instead asking the reader to wade through a dense thicket of information while offering little advice and few opinions (perhaps her training in architectural philosophy compels her to let evidence speak for itself).

Her initial question is followed by a series of firm profiles, project case studies, interviews with architectural writers, notes on architectural photography and presentation, and a few lists—none of which directly address marketing per se. There is, furthermore, no connecting thread between case studies and the book's collages of bright images, some of which are not mentioned in the text. Only in the 20-page section on architectural photography do the images clearly illustrate the narrative. After a weak conclusion, the author finally offers a few useful guidelines for hiring communications specialists, followed by some general tips, a bibliography of resources, and a directory of photo agencies. *Larissa Babij*

New Museums: Contemporary Museum Architecture Around the World, *by Mimi Zeiger. New York: Universe Publishing, 2005, 208 pages, $29.95.*

No building type is so invested with potential as today's museums, expected to function as memorials, menders of urban decay, creators of new civic images, and even socio-political statements (witness the French government's recent decision to enlarge the Louvre's Islamic department). Mimi Zeiger's compendium of recent projects goes beyond previous publications in its range of museum types and its geographical scope, with nearly global coverage comprising examples from the U.S., Europe, China, and Japan. Included are museums of art, science, natural history, papermaking, stonework, volcanoes, and archaeological sites.

The book loosely divides museums into three categories. The first,

“Civic Pavilion,” includes institutions like the Contemporary Art Museum in St. Louis by Allied Works Architecture, which enlivens its urban context. The second, “Regional Response,” refers to museums such as Takaharu + Yui Tezuka Architects’ Echigo-Matsunoyama Museum of Natural Science in Matsunoyama, Japan, which relates to a pastoral setting. Zeiger presents Dia:Beacon, renovated by artist Robert Irwin in collaboration with Open Office, as an example of a third type, “Objet d’Art,” museums that create a spatial synthesis between art and architecture.

A single page of text, written in an informal, no-nonsense style, accompanies several pages of photographs for each museum. These thumbnail sketches are reliably accurate and at times even evocative. Zeiger provides the cultural context for each project, such as the regionalism of Chinese architect Jiakun Liu measured against a backdrop of high-profile international practitioners.

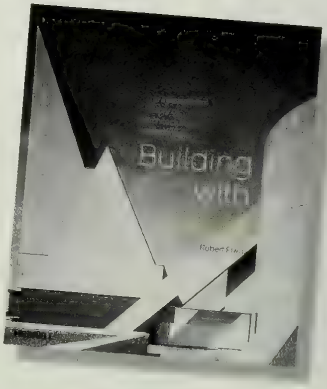
Missing in most cases, however, are comparable relationships between the featured museum and other work by the same architect. More important is the absence of plan drawings. And while exteriors are beautifully illustrated, interiors are often short-changed, with views of circulation areas outnumbering those of exhibition spaces.

The extraordinary proliferation of museums in the last several years makes it hard to keep abreast of the topic. Already Zeiger’s book seems slightly out-of-date: By now, Steven Holl’s Bellevue Arts Museum has been renovated by a different architect in accordance with a new mission. Also, one wonders why SANAA’s recently completed 21st Century Museum of Contemporary Art in Kanazawa, Japan (2004), was not included in addition to the firm’s O-Museum in Nagano (1999).

New Museums does not attempt meaningful architectural analyses. Rather, like *Museum Builders* (1994), edited by James Steele, and others in a similar vein, the emphasis is on illustrations. Its smaller format, however, makes this book the most practical.
Victoria Newhouse

Building with Light: The International History of Architectural Photography, *by Robert Elwall. London: Merrell, 2004, 240 pages. $59.95.*

In his book chronicling the history of architectural photography, Robert Elwall features one of the most influential pictures ever taken of any building—a black-and-white photo of Mies’s Seagram Building, taken by Ezra Stoller in 1958. This portrait remains our primary image of that classic statement of steel-and-glass construction. It was taken from a vantage point unavailable to the general public, and has about as much poetry as a mug shot.



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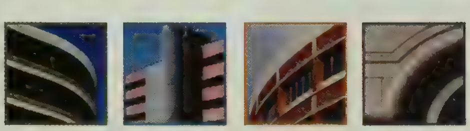


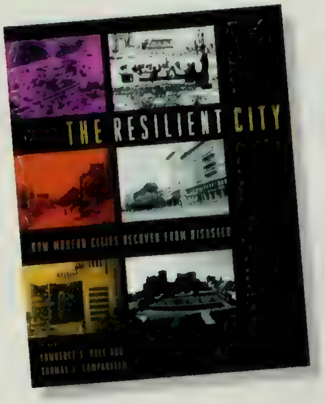
Likewise, Stoller's overly corrected portraits of Wright's Johnson Wax buildings come off as cold and off-putting. Such photography did the architectural profession no favors; Stoller's images did as much to bring on the demise of Modernism as any Robert Venturi polemic.

Building with Light is a welcome reminder of photography's symbiotic yet tension-filled relationship with buildings. Elwall has provided a solid chronological survey of the topic. There are predictable chestnuts, such as Frederick Evans's cathedral views and Julius Shulman's California houses of the 1950s.

Is architectural photography merely documentary (we know the Larkin building only through pictures), or is it art? Photography may have diminished our architectural expectations through "desensitizing repetition of the same views," says Elwall. The most visually rewarding pictures here are those in which art trumps documentary.

The book's best images date from the 19th century. Schinkel's Schauspielhaus is supremely rendered by a spare 1856 albumen print, while few painters of ruins captured the romance of the Erechtheum better than William Stillman, American consul to Crete. Robert MacPherson's photographs of Roman antiquities "sacrificed architectural details and the principles of perspective" to capture the magnificence of the past. *William Morgan*

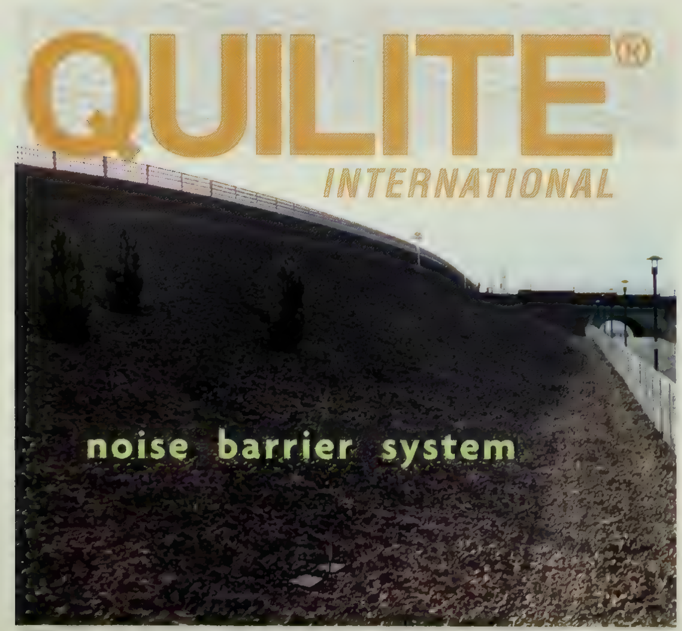
The Resilient City: How Modern Cities Recover from Disaster, *edited by Lawrence J. Vale and Thomas J. Campanella. New York: Oxford University Press, 2005, 376 pages, $24.95.*



The Resilient City comes as natural disasters seem to be gaining in ferocity and frequency and fear of terrorism has added a new level of anxiety to urban life. The book surveys a wide field of case studies of urban rebuilding, ranging from the overly familiar (New York after 9/11) to the virtually unknown (the devastating and partially concealed 1976 earthquake in Tangshan, China).

Essays by 14 academic experts take differing approaches in assessing responses to disasters. The first section addresses the narratives that emerged following destruction by terrorists in Oklahoma City in 1995 and New York in 2001. The book then moves on to historic examples, examining the symbolic dimension of the reconstruction of Washington, D.C., after the British sacked the city in 1814; the complex, ideologically competitive rebuilding of the two halves of postwar Berlin; the Soviet-influenced rebuilding of Warsaw; the case of Guernica, Spain, the Basque village destroyed by Axis bombing in 1937; and the many disasters that have befallen Jerusalem's monuments since A.D. 70. A final section focuses on the politics of reconstruction in modern-day Tokyo, Tangshan, Mexico City, Beirut, and Los Angeles, with a further contribution on the effects of digital technologies on urban reconstruction.

It is difficult to make broad generalizations from this immense stock of information, but to their credit, the editors set out twelve "axioms of resilience." These emphasize the



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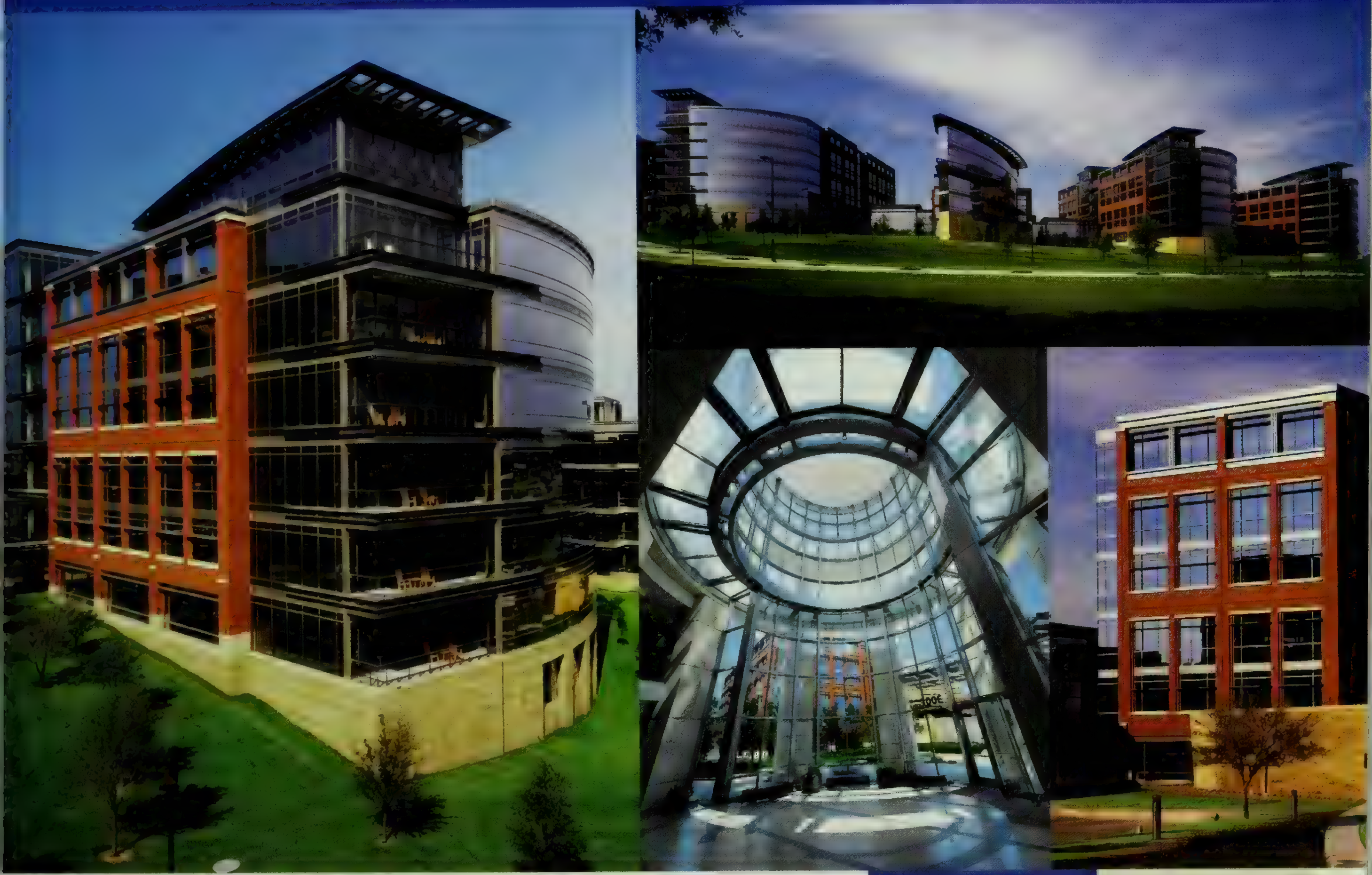

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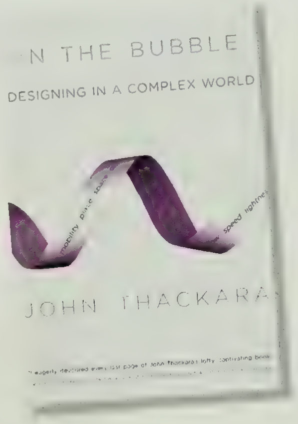
necessity of "narratives of resilience for successful reconstruction efforts"—that is, officially supported accounts of how the disaster occurred and how it is being overcome. The authors add, however, that such narratives are always contested. Successful urban resilience, they insist, is linked to larger national efforts and is always made possible by political and financial contributions from beyond the immediate area of the crisis. The authors believe rebuilding is driven by remembrance, and they are fascinated by "power of place" in allowing urban residents to overcome disasters. They conclude by insisting that resilience encompasses more than rebuilding, pointing to Guernica's unhealed wounds despite rapid physical rebuilding.

The case of Guernica, well presented by Julie B. Kirschbaum and Desirée Sideroff, has particular resonance today, as the Nazi bombers targeted the most populated downtown civilian area to instill fear in a population for whom the town symbolized Basque democracy and autonomy. Although Francisco Franco oversaw the city's reconstruction, it was Picasso's famous painting *Guernica* that survivors saw as the real memorial of the event. The authors conclude that Guernica offers a particularly clear example of the need for long-term study of urban resilience within cultural, political, and emotional frameworks. It is, in fact, an approach used in many of the essays included in this thoughtful book. *Eric Mumford*

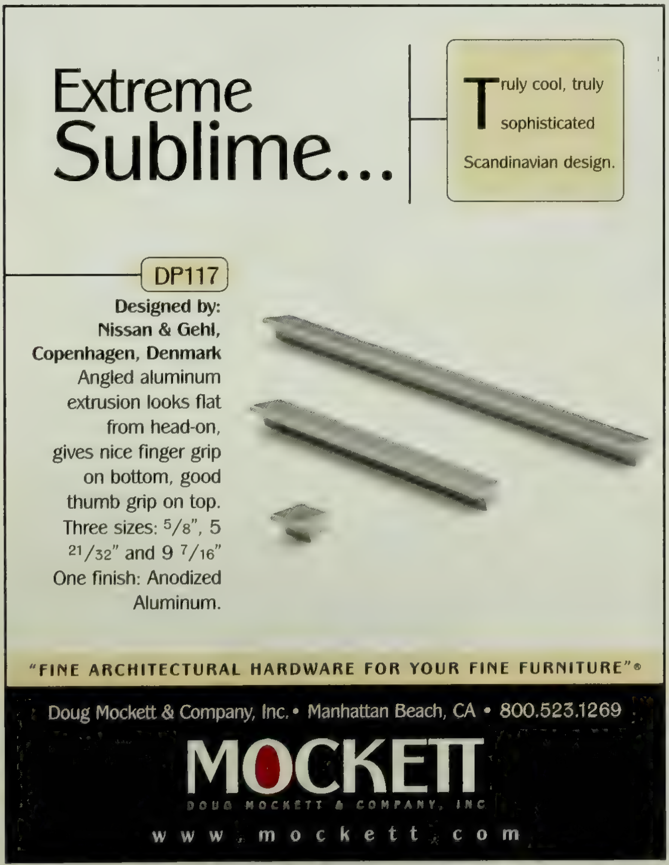
In the Bubble: Designing in a Complex World, *by John Thackara. Cambridge: The MIT Press, 2005, 321 pages, $32.95.*

John Thackara, whose previous books include *Design After Modernism,* is the director of "a design futures network based in Amsterdam and Bangalore." His book's title is a phrase used by air-traffic controllers to describe their state of mind when they feel fully in control—a feeling he believes we can achieve if "people are designed back into situations." The book advocates such humanistic redesign. It is organized by themes of modern life, including "lightness," "locality," and "flow." Within these themes, Thackara leaps nimbly from statistics to observations to anecdotes, from past to present to future, from energy to the environment, from the Burning Man Festival in Arizona to the Bombay Lunch Delivery program.



Many of his observations touch on architecture. A Prada store in Tokyo by Herzog & de Meuron "smelled like the last days of Rome." The Roissy Terminal 1 at Paris's Charles de Gaulle airport is a "disorienting" example of a "building that serves the system, not the system's users." And Rem Koolhaas's Euro-Lille in France makes its users "feel like one of those tiny humanoid figures architects use to decorate their models: sleek, but blind."

Thackara begins with the premise that "if we can design our way into difficulty [and he clearly thinks we have], we can design our way out." His final words support connections and collaborations: "Whatever you choose to do, don't try to do it alone. We are all designers now." *Stanley Abercrombie*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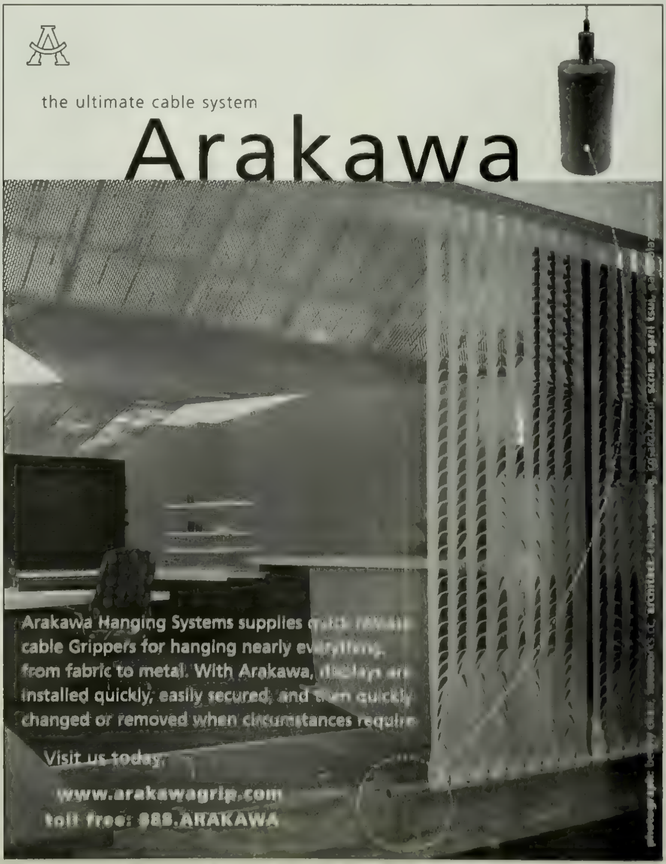
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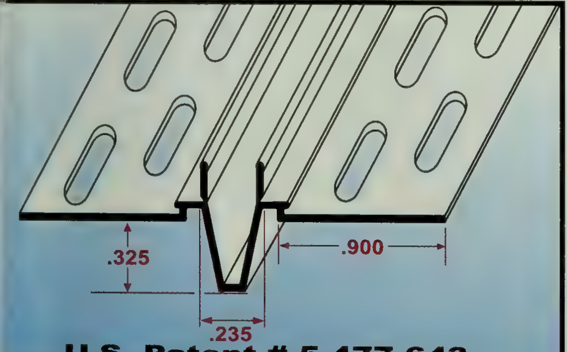

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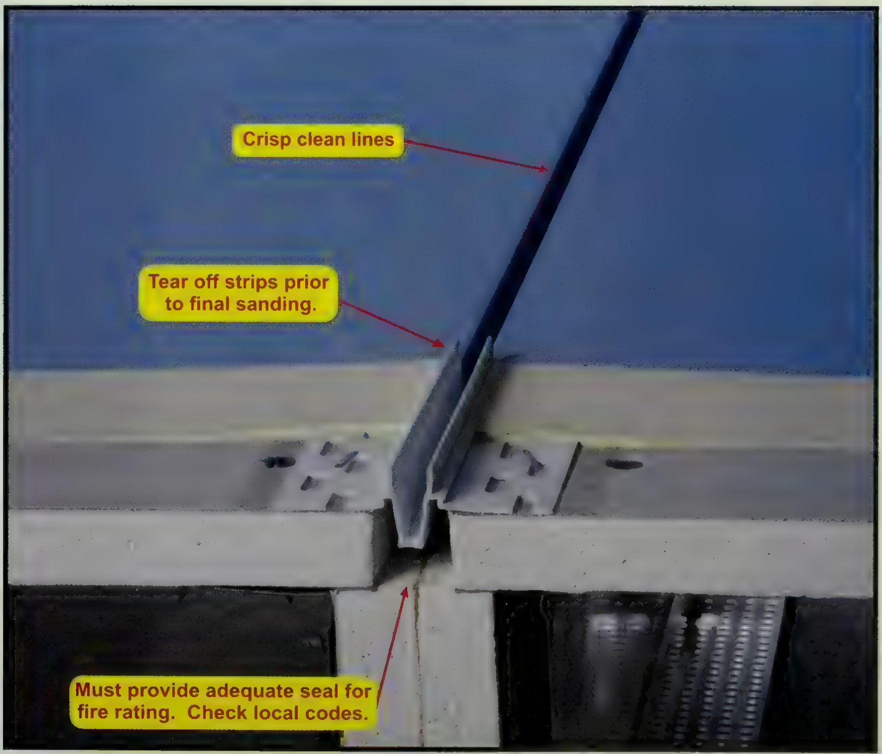
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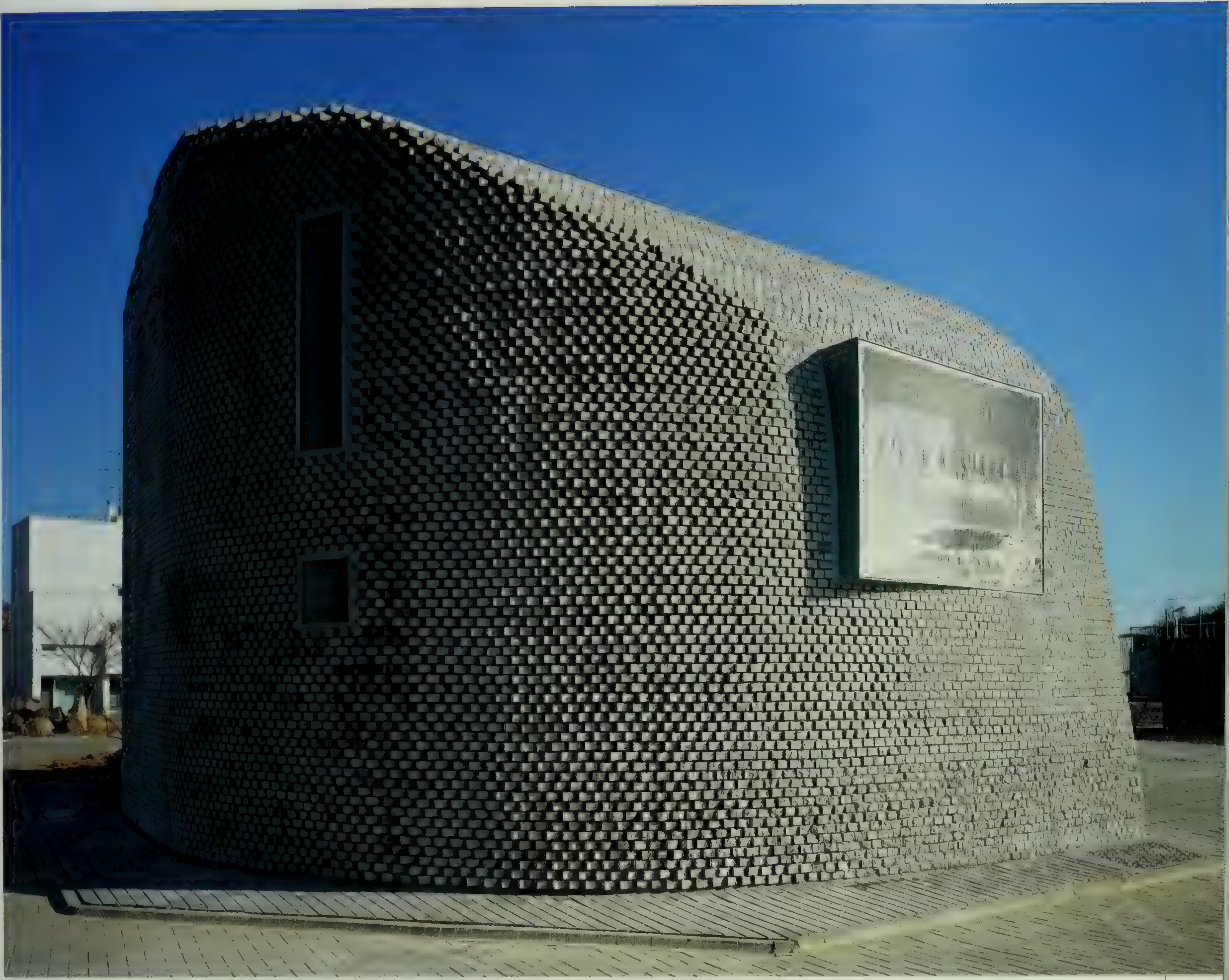


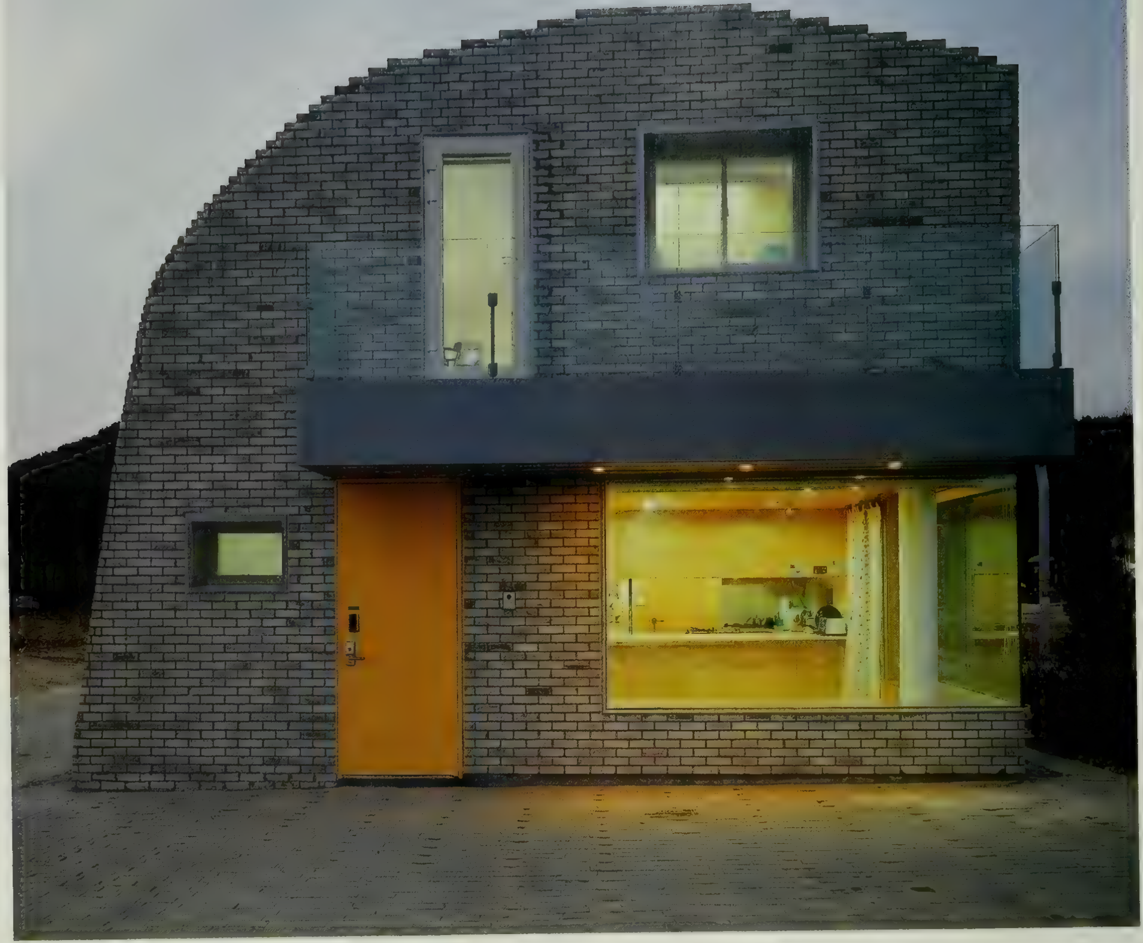
By Beth Broome

A little house rises like a swell on a brick sea

In a world that seems increasingly to value its privacy and the right to spread out, a striking home virtually straddles the divide between capitalism and communism, exemplifying an economy of means and a dedication to community.

Pixel House lies in the Heyri Art Valley, a planned artist community just south of the heavily fortified Demilitarized Zone that separates North from South Korea. Organized around five hills, the development is overseen by architectural coordinators Junsung Kim and Jongkyu Kim, who preselected a team of architects for the project. The team included James Slade and Minsuk Cho, who were later chosen by a young family seeking to build their home in the valley.

The clients, who had been active in the Socialist party, wanted a house that reflected their political background: a simple, compact building that, rather than functioning as a private sanctuary, would take into account greater societal needs. Consisting of three phases (to date, only one has been realized), the residence was



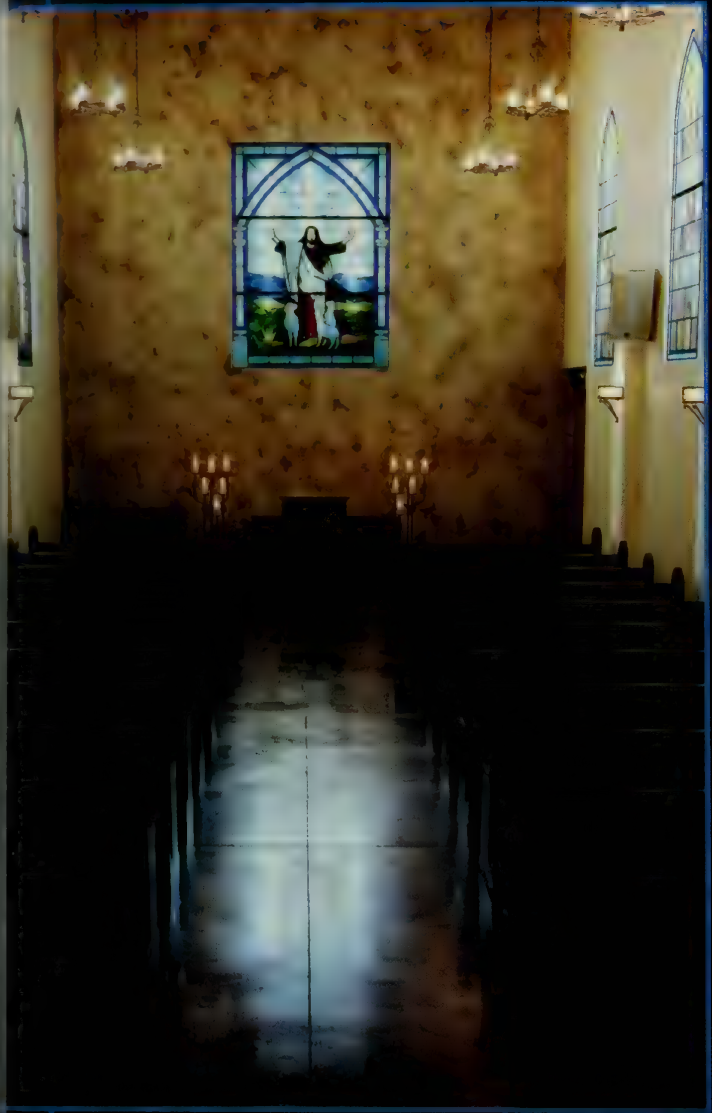
The diminutive Pixel House practices economy on a number of levels. The interiors of the 900-square-foot home consist of Sheetrock, maple plywood, and a lively palette for the walls.

designed to serve a secondary function as a children's day-care center while the family was gone during the day. Phases two and three involve separate buildings sited to form a courtyard open to the neighborhood—a move that activates the environment, inviting inclusions, rather than creating a barrier.

While the valley's master plan called for a continuous row of houses, Slade and Cho decided to set their home, which sits at the end of the row, apart from the resulting "wall." However, instead of placing an object on the field—and to avoid having the house appear simply as a fragment of the row—the architects integrated the building into the landscape. Using a sandy-colored concrete brick, Slade and Cho effectively wove the house into the fabric of the surrounding hardscape, creating the illusion of it rising out of the paved area. "Once we broke the rule of separating the house from the row," says Slade, "we wanted to *really* break it, and the project evolved into a hardscape bulge"—or, in Cho's more colorful choice of words, "a pimple emerging from the ground."

The brick, laid in an offset pattern over a waterproofed concrete shell, lends a pixelated appearance to the curved form. On a micro scale, the house mimics the larger development, which consists of a series of boxy structures stepped on a rolling topography. Pixel House stands apart from the neighboring residences, but it is not alienating: It asserts its individuality while blending into the landscape and engaging the community. ■

Reverb Reinvented.



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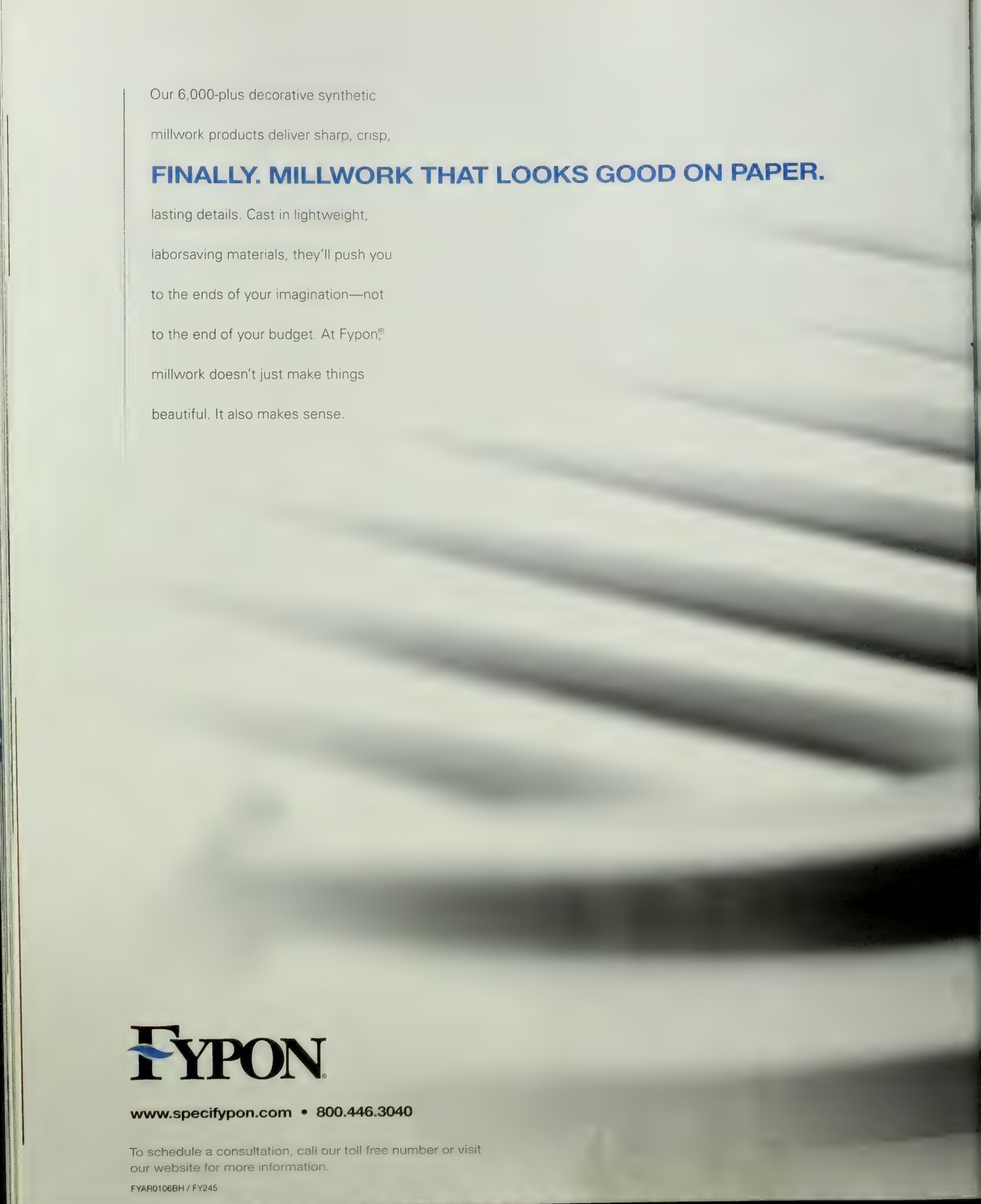

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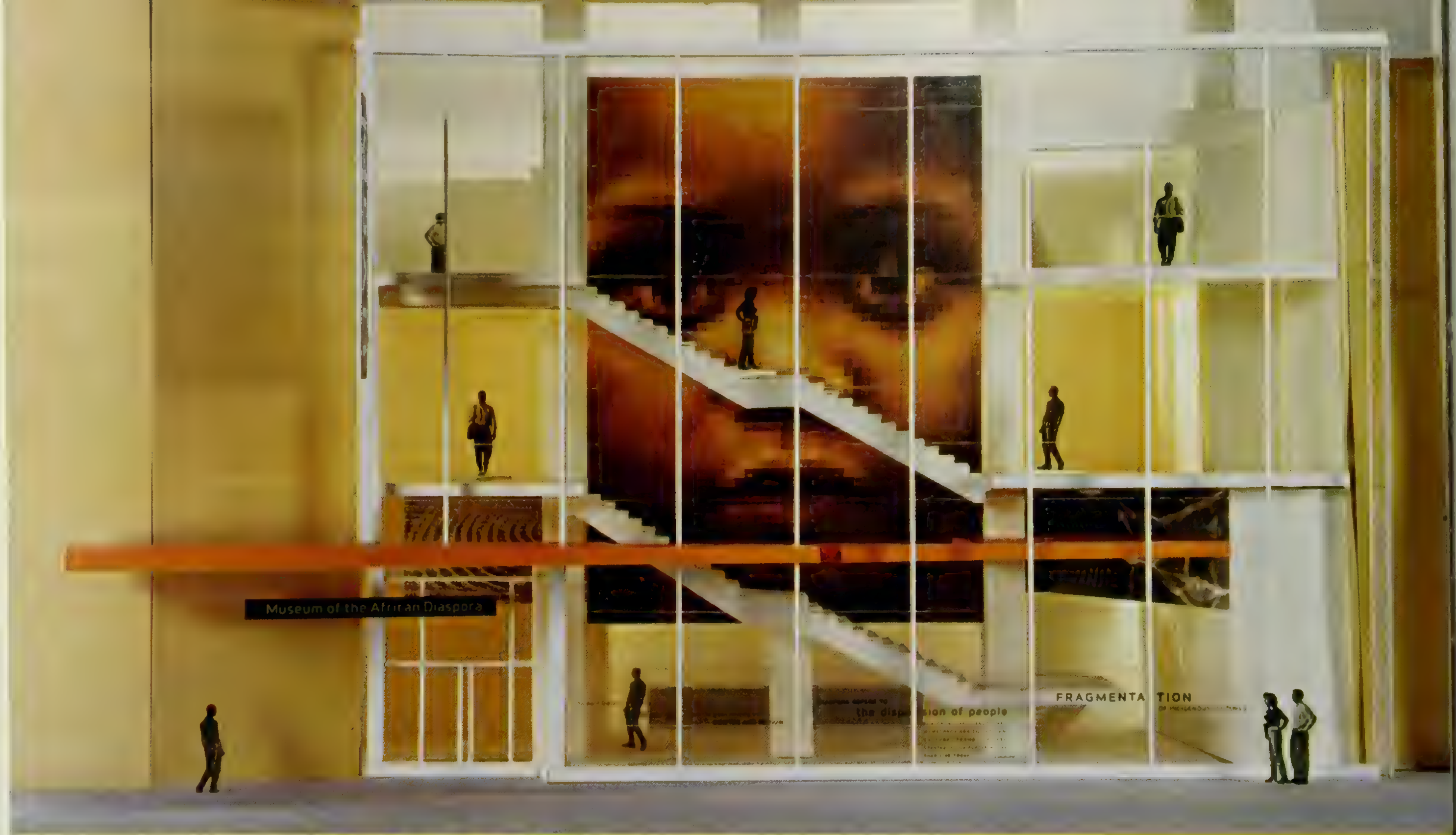


Museum of the African Diaspora, San Francisco

Through various forms of narrative, the museum tells the story of the migration of the African people from their homeland to the rest of the world throughout the course of history. [illegible] Projects designed the exhibition [illegible] and graphic identity, linking the architecture with a sense of the disruption that migration inevitably entails. A huge photomosaic portrait that forms the backdrop of one of the main circulation spaces [illegible] and boldly announces the museum's presence along a busy stretch in San Francisco's Yerba Buena district.

Turning Surface into Symbol

The environmental design firm **Sussman/Prejza** enriches architecture with graphics

By Joseph Giovannini

Some architects anticipate the inevitable attachment of graphics and signage to their buildings by controlling placement and typeface. Others take cues from graphics instead of treating them as a necessary evil, making a virtue of flat architectural surfaces by coloring constituent parts such as spandrels and mullions to create buildingwide patterns, and elaborating flatness into a mutable quality. It is ironic, then, that a graphic design firm rather than an architect has been at the forefront of making graphics in this way for a generation. The Los Angeles–based environmental design firm Sussman/Prejza has developed and honed a spatial understanding of graphics, logos, and signage—a transition akin to the strokes of paint that Pop artist Roy Lichtenstein lifted off the canvas and turned into sculpture. Off the wall and independent of surface, signs and even color in designs by Sussman/Prejza stand free on their own, becoming markers that articulate and organize space through both placement and message.

In their wide-ranging practice, the husband-and-wife team of Deborah Sussman and Mark Prejza embrace the multidisciplinary nature of design, not a surprise given their backgrounds—Sussman long worked at the Office of Charles and Ray Eames, and Prejza was trained as an architect and planner. Their projects, both stand-alone and in collaboration with architects, sit at the nexus of graphics, architecture, and city planning; the work ranges from designs for the printed page to the visual identity of entire cities.

If their work has helped liberate graphics from the surface, Sussman and Prejza have shown a parallel tendency to localize and identify the space in which they situate their graphics. When Sussman studied in Switzerland on a Fulbright scholarship in the 1950s, "the prevalent idea was the globalization of design," she remembers. "Everybody could use one typeface all over the world. There would be one way of systemizing everything." Sussman, however, had come from a design culture led by such figures as the Eameses, Alexander Gerard, and Charles Moore, who resisted the nascent global approach to design by supporting the various ways that art and culture have always been shaped by locale. "A monoculture doesn't acknowledge the difference between being by the sea or at the top of a mountain," says Prejza. "Localization enriches life."

Scroll back in memory to the 1984 Olympics in Los Angeles: If, during the Athens Olympics of 2004, you felt a sense of déja vu as you watched athletes bounding through intense color fields, you can trace the visual echoes back to the brilliant graphic program that Sussman/Prejza invented for the Los Angeles Games over 20 years ago. Together with Los Angeles architect Jon Jerde, the designers developed a kit of graphic parts that was sprinkled like confetti among the many sports and cultural locations hosting the games. Colorful streamers, bunting, and kiosks dotted Los Angeles, along with freestanding, 10-foot-high stars and towering scaffolds strung with banners, all marking venues that became backdrops for television cameras. The cameras, naturally, took to the vivid colors like moths to flame. Visually, Sussman/Prejza

Joseph Giovannini is an architect and critic based in New York and Los Angeles.

JOHN JOHNSTON FOR SUSSMAN/PREJZA
(OPPOSITE, BOTTOM LEFT)

owned the 1984 Olympics. In creating a signage program independent of buildings, the firm's graphics and identity markers became a sort of infrastructure in themselves.

The firm has built on this success ever since. Much of this work has involved developing subarchitectural and extra-architectural aspects of the physical environment that are often overlooked by architects, or the clients who hire them. When officials from Santa Monica commissioned Sussman/Prejza to redesign the city's logo, the firm found the visual DNA of the place in its unique site at the intersection of mountains, beach, and sky. Brilliant sunsets yielded colors that abstracted the city's view along the coast; blue, yellow, orange, and green represented the sea, sky, beach, sun, and mountains, and in part the palette came from the city's original seal. As the commission expanded to include Santa Monica's welcome signs, street signs, and symbols on municipal vehicles, the colors migrated from the logo to the infrastructure and environment, as though flocks of exotic parrots had been released into the streets. The public "Blue Bus," which had inexplicably been painted white for years, became blue again—a spirited Gauloise hue that embodies the pluck of this progressive, upscale seaside community.

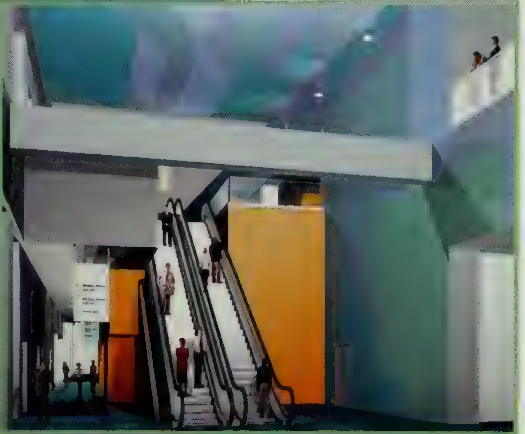
Other cities have come calling since then—Philadelphia, San Diego, and the Los Angeles district of San Pedro. In nearby Culver City, where Sussman and Prejza have their offices, the designers implemented a thorough, citywide graphic identity program. Here, buses were painted green and designs expanded beyond signage to encompass the sign's support structures—steel poles that dance chaotically and are ringed near the top with a collar. Sussman/Prejza also organized a street-furniture program and coordinated a landscaping program with Santa Monica–based Campbell & Campbell. All these elements lent Culver City's streetscape a physical density that gives the commercial arteries a lively urban edge and corrects the ambient urban anomie so typical of the streets of Los Angeles.

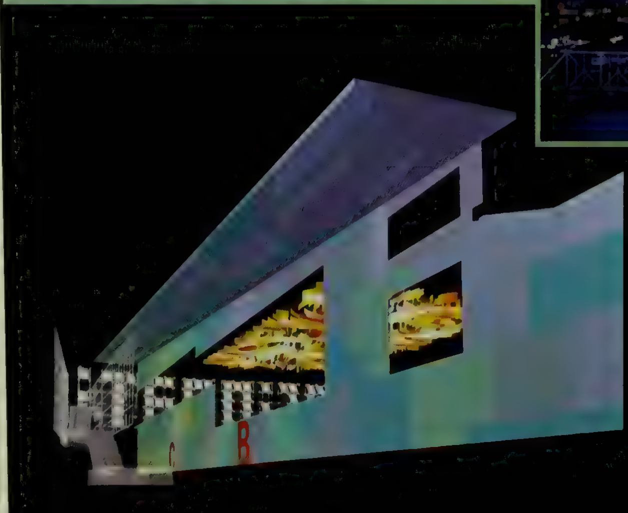
The firm is now in the process of several major projects in which graphics are both spatial and integral to the architecture. No project exemplifies the team's expertise better than the nearly completed Cincinnati Convention Center, which it is designing in collaboration with LMN Architects of Seattle. The graphic artists attached huge letters spelling out the city's name within a structural cage that forms one end of the building. The facade acts as a billboard, but because the words are suspended in space, they also recall the renowned HOLLYWOOD sign nestled in the hills. Here, the letters enliven a dense urban setting and are formed kinetically from individual panels that configure into the word only when seen from certain angles. The sign transcends the word itself to become an interactive urban icon.

The interpretation of environmental graphics takes an

Cincinnati Convention Center, Cincinnati

From a distance, panels attached to a structural cage atop the convention center form the letters of an integrated billboard proudly announcing the building's urban locale (lower right). The calming blue-green palette of Sussman/Prejza's wall finishes and carpet patterns (above and right) was inspired by the Ohio River and helps connect indoors and out. A sense of motion, flow, and circulation is echoed in ceiling details with sinuous curves, like currents in the river (bottom). The 750,000-square-foot center will open later this year.





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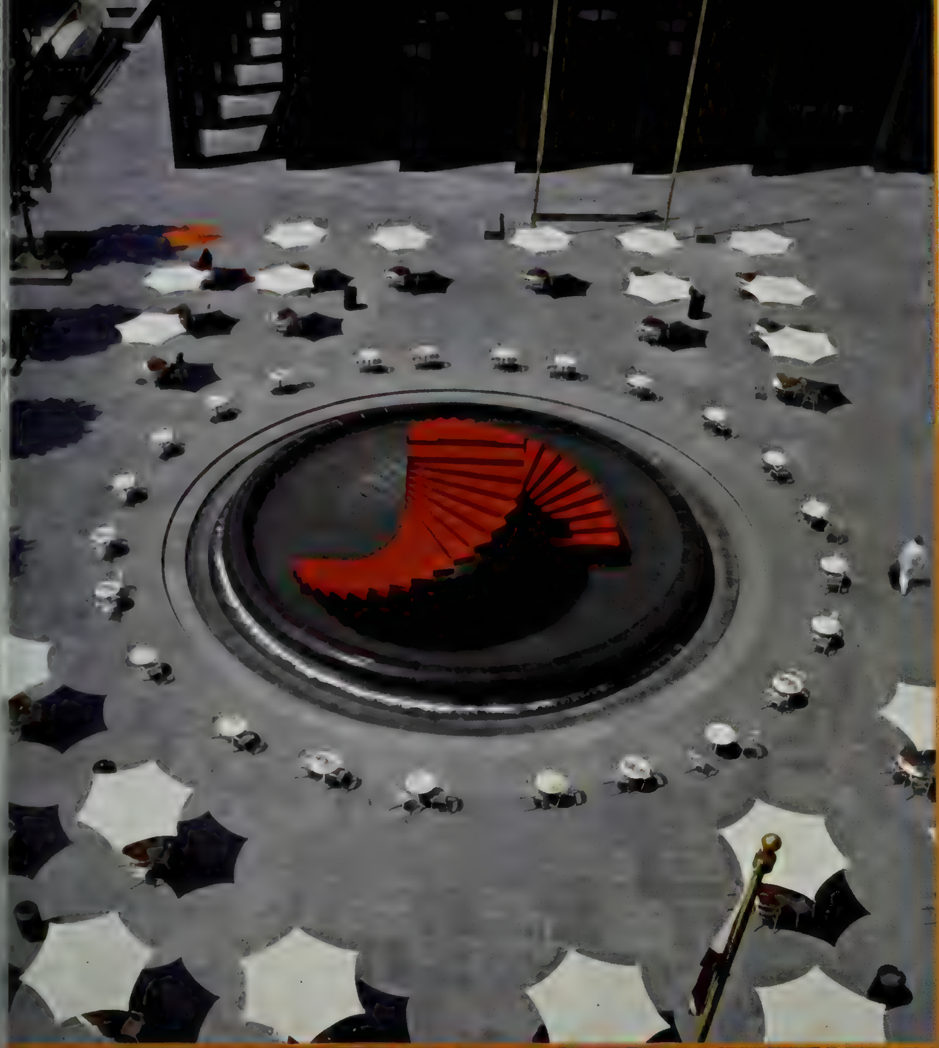
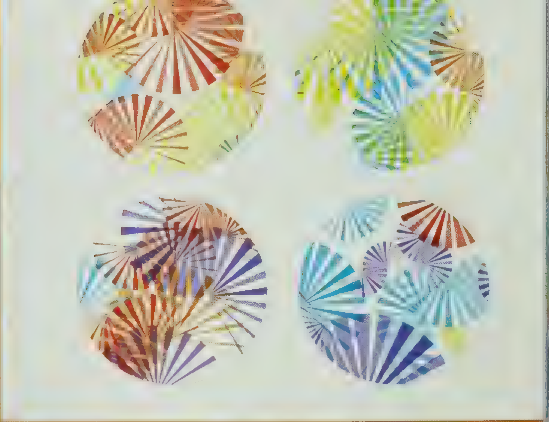
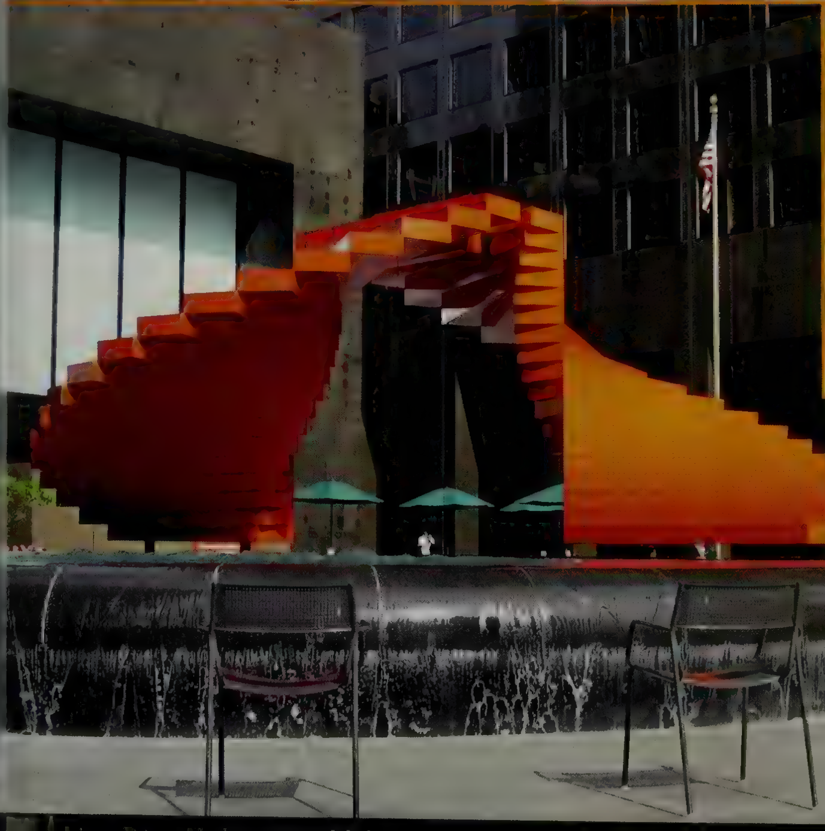
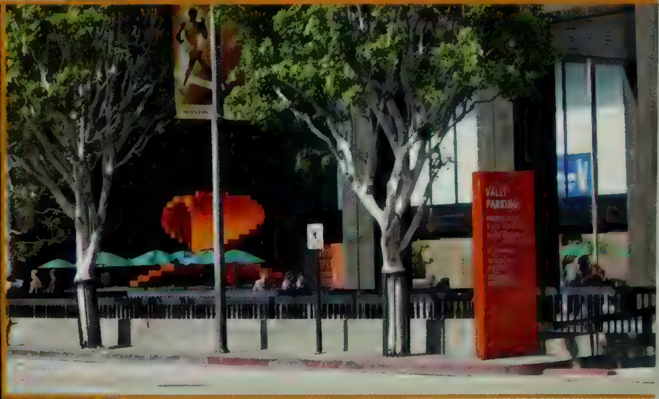


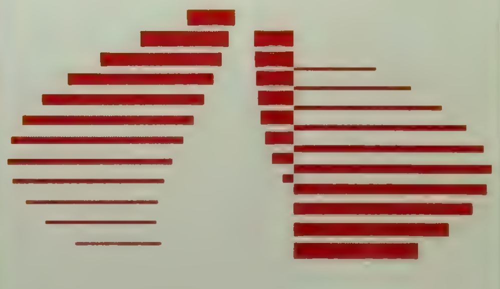


City National Plaza, Los Angeles

When a large bank recast the landmark ARCO Towers as its national headquarters, Sussman/Prejza was tapped to implement a new logo and environmental design for the interiors and the plaza between the buildings. Taking cues from a bright spiral sculpture on the plaza, the designers created a logo (bottom), signage (below), and a lively set of patterns incorporating the logo in various colors, scales, and overlapping motifs. The patterns are scattered throughout the building and plaza—on carpets, wall finishes, and even the café-style tables that surround the sculpture.







ironic reverse turn in this project. Because the designers frequently develop interiors inspired by the outdoors, they collapse entire landscapes into fields of color applied to walls, ceilings, and floors. "The Ohio River, with its bridges and riverboats, was important in the formation of the city," says Sussman, "so at the Cincinnati Center, the idea was to wrap the visitor in an envelope of color that grew from the river." In the foyers, they designed ceilings and floors with patterns that embody different ways of looking at water, studying Impressionist and Post-Impressionist painters to develop pointillist-inspired carpet patterns in complex colors. By using undulating patterns on the ceiling and walls of the main ballroom, they break down the big-box feel of the space and connect it to the setting. Their graphic program successfully imports the outdoor environment into the center.

In San Francisco's Museum of the African Diaspora, which opened last month, Sussman/Prejza was brought into the design team by architect The Freelon Group to design the logo, graphics, and exhibition spaces. They took the idea of social disruption that Africans have encountered into the entry hall and facade by creating a long, rectangular plane that floats across the three-story space and erupts through the facade, forming a canopy. It's a slash of color made concrete as a part of the architecture. Sussman/Prejza also made a poignant portrait architectural—they tapped Runaway Technology to transform a photograph of a young African girl, taken by Chester Higgins, Jr., into a two-story photomosaic composed of more than 2,000 donated portraits of other Africans. The gigantic face claims ownership of the space and personalizes it. Inside, a mix of immersive multimedia-exhibit experiences and places for public and private reflection lend gravitas to the narratives of the African experience in different places and throughout human history.

With AC Martin Partners, Sussman/Prejza is designing new environmental graphics for the twin ARCO Towers in Los Angeles—landmark skyscrapers now being recast as headquarters for the City National Bank. The designers have taken their visual theme from a spiral sculpture that is the centerpiece of the plaza. "We often start with a three-dimensional thing as an inspiration for a graphic," says Sussman. Ironically, the sculpture is by Herbert Bayer, a renowned Bauhaus graphic artist who worked, like Sussman/Prejza, outside the classic limits of his discipline. In a reversal of their usual process, the designers have transformed the sculpture back into a graphic identity and iconographic logo that appears on windows, signs, carpets, and tabletops. "The question is how to give new life to the building and still respect the original," she says. "We're taking something that exists and making it new." ■

City of Santa Monica, California

Just a stone's throw from Sussman/Prejza's office in Culver City, this upscale, artistic community got a fresh look when the designers implemented a new logo and comprehensive graphic identity for everything from street signs to the public bus system. The bright palette was inspired by Santa Monica's dazzling sunsets and unique location near the mountains, beach, and sea. Following the success of this program, several other cities hired the firm for similar makeovers.

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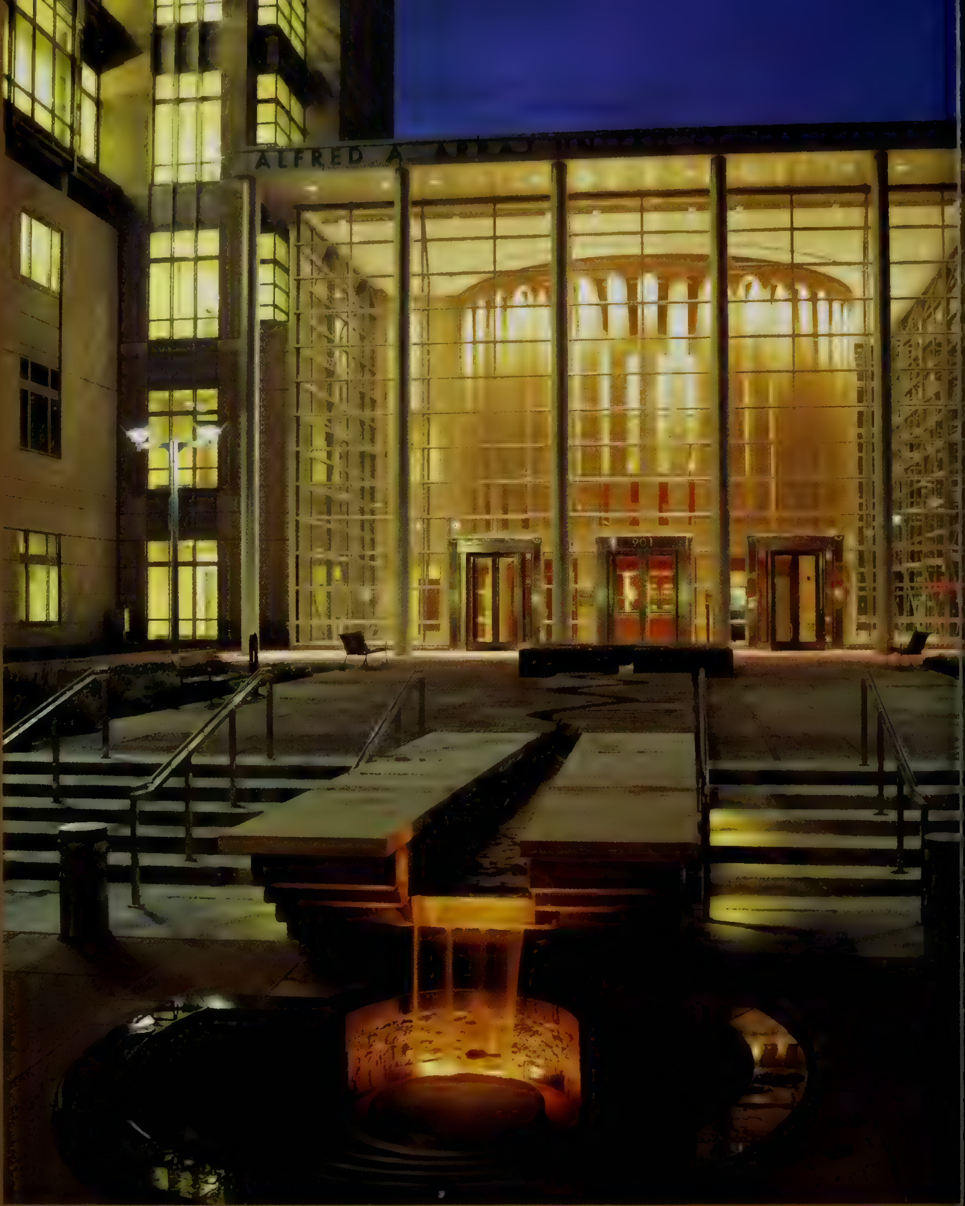
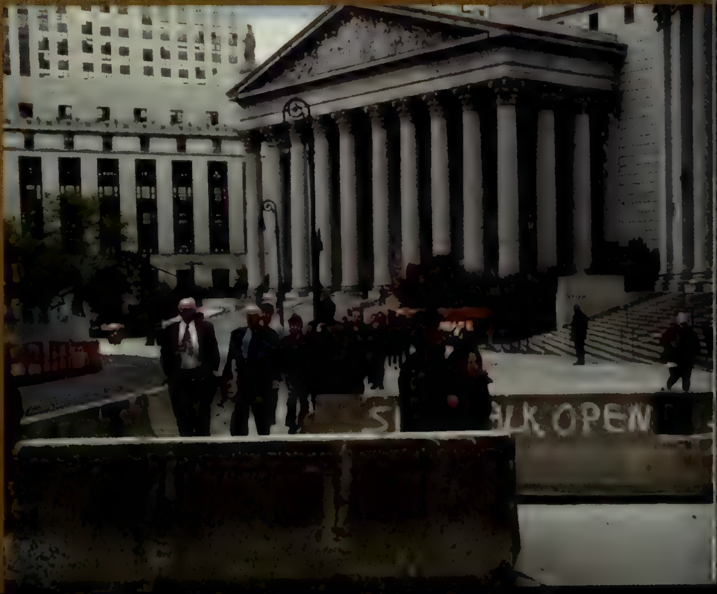


The architecture of Boston's John Adams Courthouse (restored this year by CBT/Childs Bertman Tseckares) dignifies the public's role in the courts (left three), in contrast to crude security measures installed at Lower Manhattan courts in New York (right). Security issues at the Alfred A. Arraj U.S. Courthouse in Denver (above) have been addressed in a publicly welcoming way by architects HOK, with Anderson Mason Dale.



The **Importance of Openness** in an era of security

A conversation with Supreme Court Justice **Stephen G. Breyer**

By Jane C. Loeffler

*Courts increasingly are called upon to strike a balance between protecting Americans from acts of terror and preserving civil liberties. For some jurists, who may be targets for terrorists and vengeful defendants alike, striking that balance in the design of court facilities brings the issue close to home. Each new attack brings calls for greater fortification and less public access—potentially threatening a core value of democratic government. Supreme Court Justice Stephen G. Breyer confronted these dilemmas working with Harry Cobb (of Pei Cobb Freed) in planning the John Joseph Moakley Federal Courthouse on Boston's Fan Pier [*RECORD*, March 1999, page 108]. Speaking at the dedication of the newly renovated John Adams Courthouse in Boston's Pemberton Square (CBT/Childs Bertman Tseckares, 2005), Justice Breyer renewed his call on public officials to consider the values associated with open public buildings before making security decisions of lasting import. Those remarks prompted this interview.*

ARCHITECTURAL RECORD: *How can government officials* not *heed advice from security experts?*
STEPHEN G. BREYER: People in any government agency who are in positions of authority have to understand that the issue of security and the issue of openness are both important, and they sometimes argue in opposite directions. One is sometimes tempted simply to turn matters over to security officials. But security officials operate under pressures that force them to err on the side of security—even if that means closing off a building that was meant to be open to the public. This isn't a ground for criticizing them; that's their job. But it is a ground for criticizing the people in authority, because they must understand not only the importance of security but also the importance of openness.

Openness can make an enormous difference both symbolically and practically. It matters whether a public building is welcoming to the public or shuts itself off as a fortress. Persons in authority have to become informed about security needs to make decisions that require intelligent balancing. Their decisions should favor security if they conclude that the need for security is great enough to warrant a departure from openness; but they should focus on the details and squarely face this issue.

AR: *U.S. embassies are effectively closed buildings at this time. How do you argue for openness when security experts say the risk is too high?*
SB: You have to be brave enough to turn them down. Or see to modifications when the circumstances call for it. If we are not brave enough to say no when security needs don't make much sense, then we'll end up with buildings that look like our embassy in Chile, which is my example of something that looks like a fortress. People in Santiago laugh at it.

When I visited London last year, they were planning to close off the roads surrounding our embassy. I asked the embassy people why. The justification was that someone could approach the embassy with a bomb. Yes, that's true. You could turn every public building into a Fort Knox using such a theory. If the secretary of state or a deputy secretary of state actually looked into it, and heard the argument, and came to the conclusion that central London streets must be closed off, then I would respect that judgment. I think it's a matter that calls for careful consideration by such a high official before you close off a main street in central London.

It is very easy for anyone to appear to be very popular and responsible by saying 'I'm worried about human life.' Well, I'm worried about it, too. But our architecture must not wall off the government from the people. The Constitution permits people to govern themselves; the people are the government. The value of openness is such in a democracy that you should consider it carefully and give it considerable weight.

AR: *How did your own experience in planning Boston's Moakley Federal Courthouse inform your views?*
SB: When we built our courthouse in Boston, I felt strongly that it belonged to the taxpayers who paid for it. It should be apparent that such a courthouse—a public building, a beautiful building on a beautiful site—does not belong to the judges, nor to the lawyers. It belongs to the people of Boston. It's hard to work with bureaucratic institutions that are single-minded. Security people may be interested 99 percent in security; GSA [the General Services Administration that builds federal buildings] may be interested 99

Jane C. Loeffler teaches in the Honors Program at the University of Maryland, College Park, and has written for RECORD *about embassy design.*

At the Arraj Courthouse, the plaza and lobby pavilion are publicly welcoming, yet discourage vehicle bombs and limit a terror attack's damaging effects.

percent in saving money, and a group of judges may be interested only in courtroom acoustics. Yet it's possible to break through any group's single-mindedness to promote balance. I think the Boston courthouse is an example of how that can happen. Judge [Douglas] Woodlock and I spent a day a week for about three or four years working on that courthouse. Was it worth a day a week of our time? I think it was. It was an important project for the public.

AR: *What was the thinking behind the design?*
SB: Harry Cobb, the architect for our courthouse, showed us pictures of a courthouse in 17th-century Virginia. He also showed us beautiful Beaux-Arts-style courthouses built in the 19th century, of which the [John Adams] courthouse in Boston is an example. In each instance, the courthouse makes a statement that it is a public building, that the public gathers in that building, and that there is a judge who will carry out public business there. What works architecturally for a single-room courthouse can work when you have four or five courtrooms in a building, but it's very hard to design when you have 20 courtrooms. Inevitably, the building begins to look like a hospital, an office building, or an apartment house. Cobb showed us an example of a courthouse in Los Angeles that looks like a prison. You would not want people to come into a courthouse that looks like a prison.

The challenge is to build a courthouse that tells people—through what it looks like and how it's used—that it isn't a prison, that it isn't an apartment house, and that it isn't a hospital. Rather, it is a public building where a high-level official—a judge—will deal face-to-face with the most humble, ordinary citizen of the United States and spend as much time on that citizen's problems as circumstances call for.

I learned more from Harry Cobb. Before that experience, I think I would have said that we should have a decorated building, and we should have Classical forms. I learned that buildings from many different periods can say many different things. You can have a lovely Modern building or you can have a bad one. You can have a lovely Classical building or one that looks tacky. Our consulate in Munich, for example, is a Modern building that is both attractive and interesting. It's a box, but an interesting box, one that has charm and is beautiful. One cannot automatically choose Classical over Modern styles. On the contrary, what matters, I believe, is the individual building.

AR: *Is there anything remarkable about the design of Moakley's courtrooms?*
SB: The courtrooms in Boston put the judge deliberately at the same level as the lawyers and focus on the area in front of the judge, the jury, and the witness. That focus promotes a conversation among all the participants. The best example I saw of that is in the Second Circuit courtroom designed by Learned Hand [in Cass Gilbert's 1936 Federal Courthouse in New York City]. It looks like a sitting room. The judges in that famous courtroom are at the same eye level as the lawyers. Why? When lawyers are forced to carry on a conversation, the judge is more likely to get their truthful opinion, less likely to get playacting. The design facilitates the work of the court.

AR: *You are obviously proud of the product.*
SB: It shows what's wonderful about architecture. When you walk into a well-designed building you can feel your spirits rise. When a person walks into the Boston courthouse, he doesn't need to be an art connoisseur to appreciate the Ellsworth Kelly paintings. All he needs to do is open his eyes, and feel his spirits rise.

AR: *Was the Moakley courthouse altered after 9/11?*
SB: Yes, security required some changes. As I have said, security has to be taken into account, but you must try to strike a reasonable balance. You don't just ignore security.

AR: *Many architects equate openness with transparency. Do you think open architecture needs to feature glass?*

SB: No, that isn't what I had in mind. The plaza in front of the Supreme Court of the United States is open. Every citizen of the United States can walk across it, walk up the steps, and enter the building. We do have a security system; visitors must walk through an arms detector. That is an unfortunate but necessary concession to the problem of security that we face. But if we ever were to close off the plaza, or close off the building, I think we would do irreparable damage to the Constitution and to the country. It is important in a democracy that people be able to come into their public buildings, certainly the courts.

AR: *So you definitely want tourists to be able to visit the Supreme Court?*
SB: Absolutely. We used to have a million visitors a year. Unfortunately, because people are traveling less, because of concerns about security, and because of construction [at the adjacent U.S. Capitol Visitors' Center], the number of visitors has fallen to below half a million. I very much hope that it will go back up once the construction is finished. It is important that people use the building and see it, especially that children use it and see it. That's part of an education for them of how our democracy works. It encourages them to participate in our democratic government.

AR: *What was your reaction to Boston's newly renovated John Adams Courthouse that now houses the Massachusetts Supreme Judicial Court and the Court of Appeals?*
SB: I liked it. I think it's a beautiful courthouse. I'm so glad they restored it. The architecture, the murals in that huge hall—all of it shows the optimism that people felt about the country a hundred years ago.

AR: *Have you any suggestions on how we can better assess risk?*
SB: When I studied risk for my academic work, I learned that not all risks can be avoided. There are many tiny risks that are not worth eliminating. You cannot cure tiny risks at a large cost or the country will soon be bankrupt.

AR: *Should architects play a role in making security decisions?*
SB: I think they should try and get involved. The only thing we can do is create a procedure similar to the one that worked for us in Boston. That procedure involves the government decision maker, representatives of the various security agencies, and others working together with the architect. The architect must be present, because the architect can sometimes work out a way to diminish the risk while preserving other values, such as openness. That's an architect's job.

AR: *Can we balance security and openness?*
SB: Yes. But my experience tells me that there are no absolute answers. We can ask government policy makers to become involved in the process, to bring in the architects and listen to them, and talk to the security people. Everyone needs to understand that there are competing values at stake. The task is to work out a solution that respects all of those different values. That can be done. And it can lead to a superior solution and a better building. ■

Seattle's Federal Courthouse (NBBJ and Fentress Bradburn) presides over a green setback. A lobby water feature doubles as a personnel barrier.

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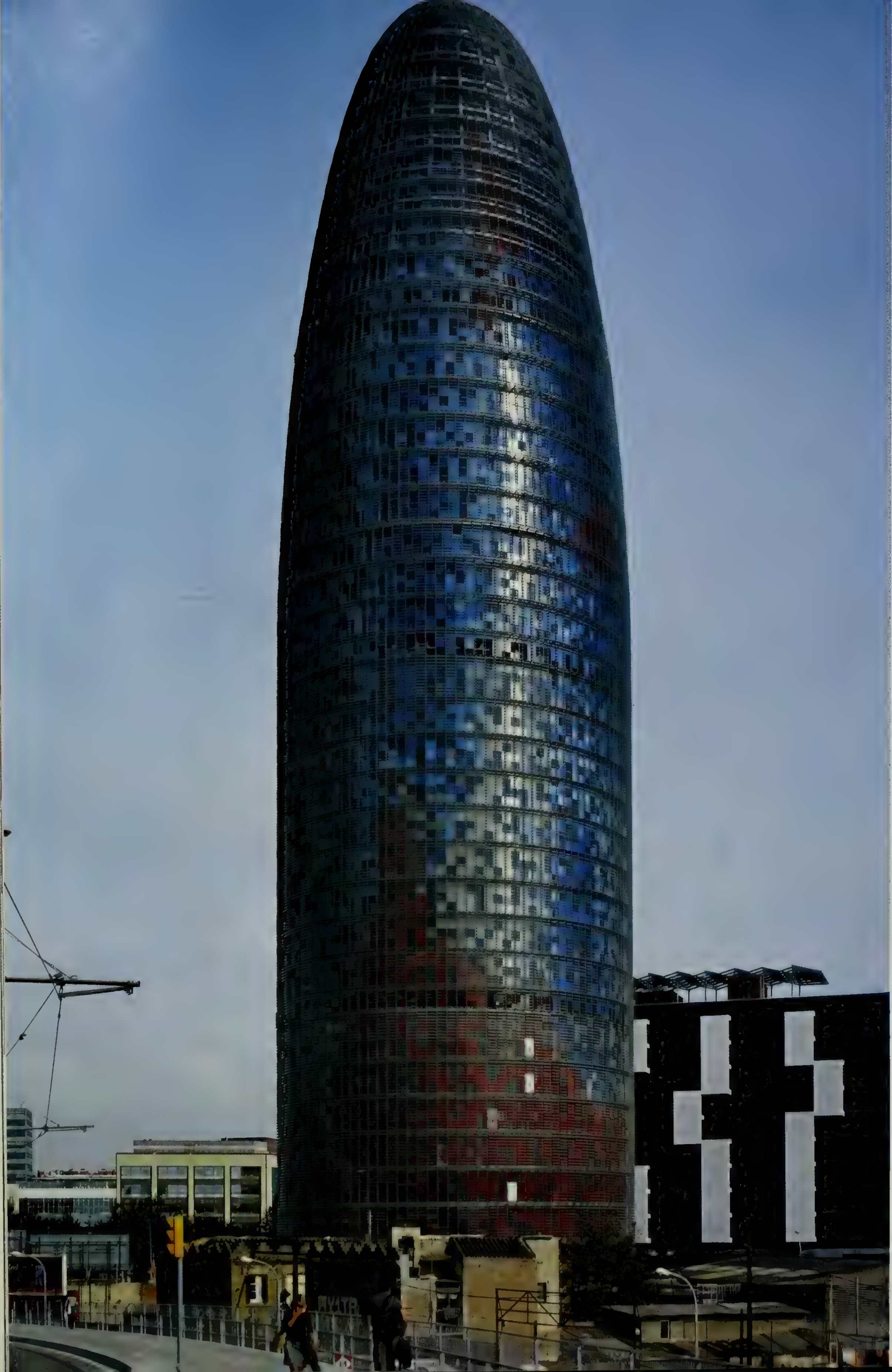
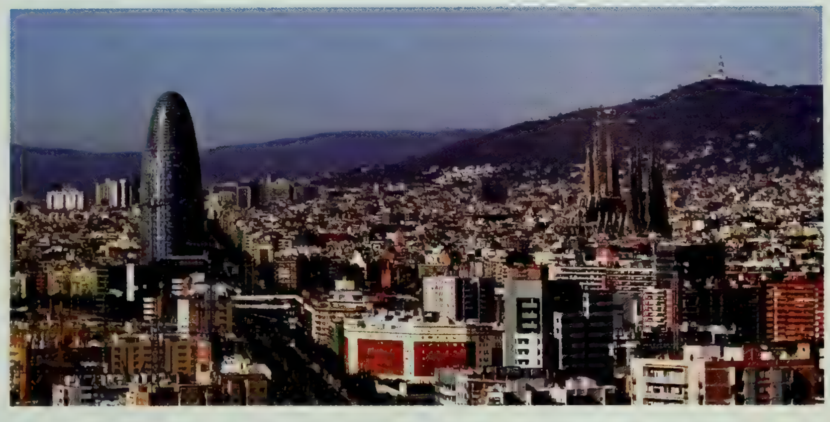
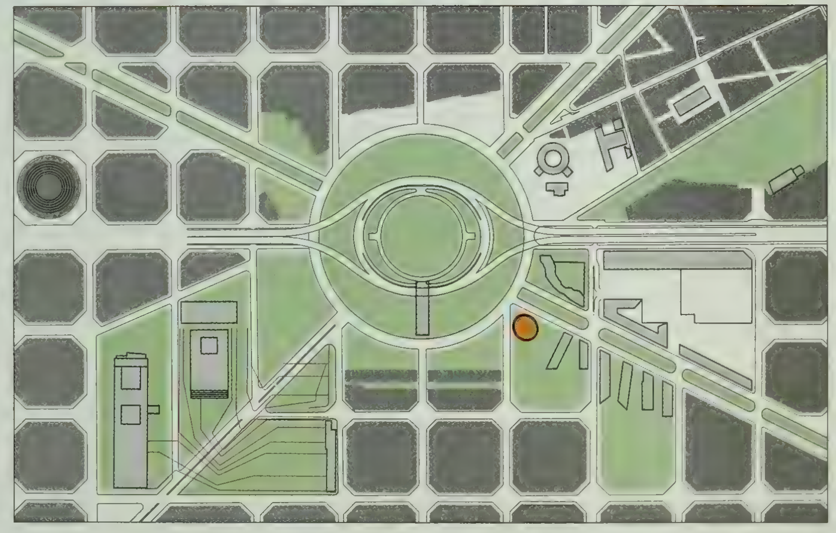


The Agbar Tower and a hotel stylishly patterned in black and white by Juli Capella Samper (left) are the first structures in what is planned as a 40-acre commercial development that will transform the Plaça Glories (site plan, opposite). The tower's intriguing liquid surface renders it a less-imposing competitor of the city's skyline icon, Gaudí's Sagrada Familia cathedral (photo, opposite).

The effervescing surface of the **AGBAR TOWER** is the startling symbol **Ateliers Jean Nouvel** has created for Barcelona's newest commercial district

By James S. Russell, AIA





Barcelona's Plaça Glories is anything but glorious. The subway exits to a beat-up sunken alley. Reaching the street, the visitor faces a throng of vehicles headed up a massive elevated roundabout that flings them onto the intercity highway network. Rising improbably out of the blocks of crumbling and boarded-up warehouses and factories is what Jean Nouvel calls his "ambassador," the bullet-shaped, 31-story "symbol of the international metropolis," the Agbar Tower.

It's hard to miss Nouvel's tower on the city's skyline, once dominated only by Gaudí's Sagrada Familia Cathedral. That's because Agbar is a 466-foot-high advertisement for the city's desire to remake the Plaça into a new commercial center in a section of the city located apart from established centers of commerce. By creating a newly well-connected, 40-acre, high-density development, Barcelona planners hope to spur growth without sacrificing the historic core.

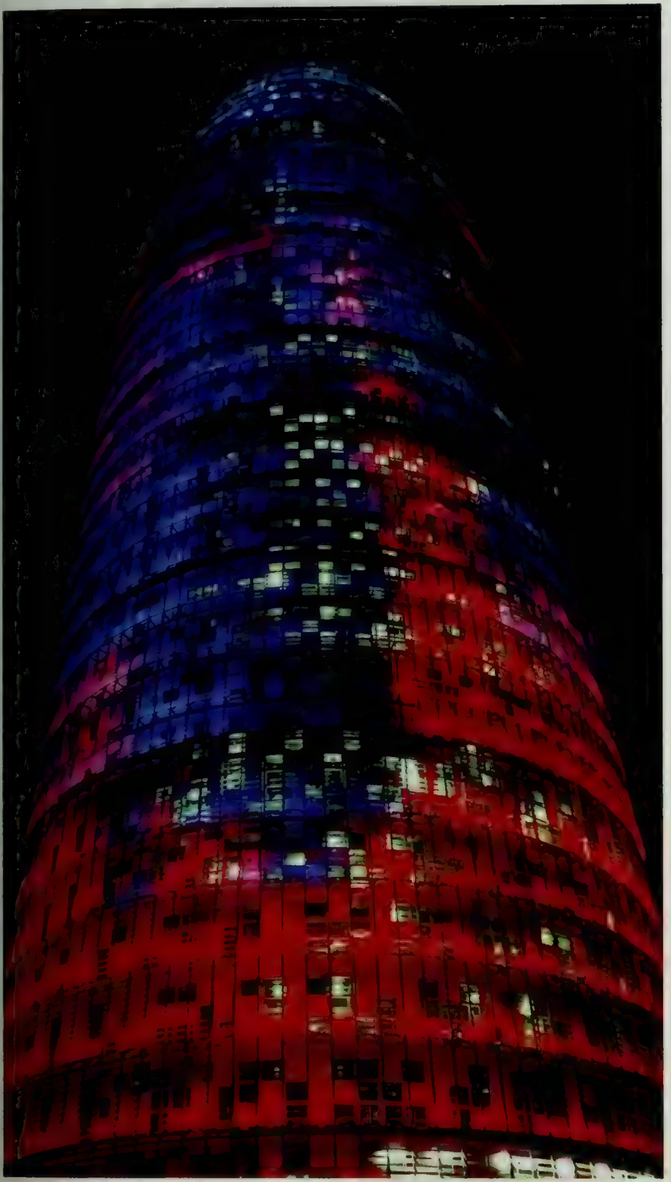
Under a vast new green square, the city will bury the roundabout, creating a transportation nexus comprising an added subway line, a regional-rail station, and a high-speed intercity rail line. Agbar and a recently built hotel will be joined by other commercial development around the green. Confronted with today's scruffy surroundings, all this may seem unlikely, but consider that the city has already extended its famous Diagonal boulevard essentially from Agbar's door through the adjacent Poblenou neighborhood to the oceanfront Barcelona Forum, where new parks, marinas, commercial and residential development, and a convention center have all been willed into being by officials in a few short years [RECORD, June 2004, page 109].

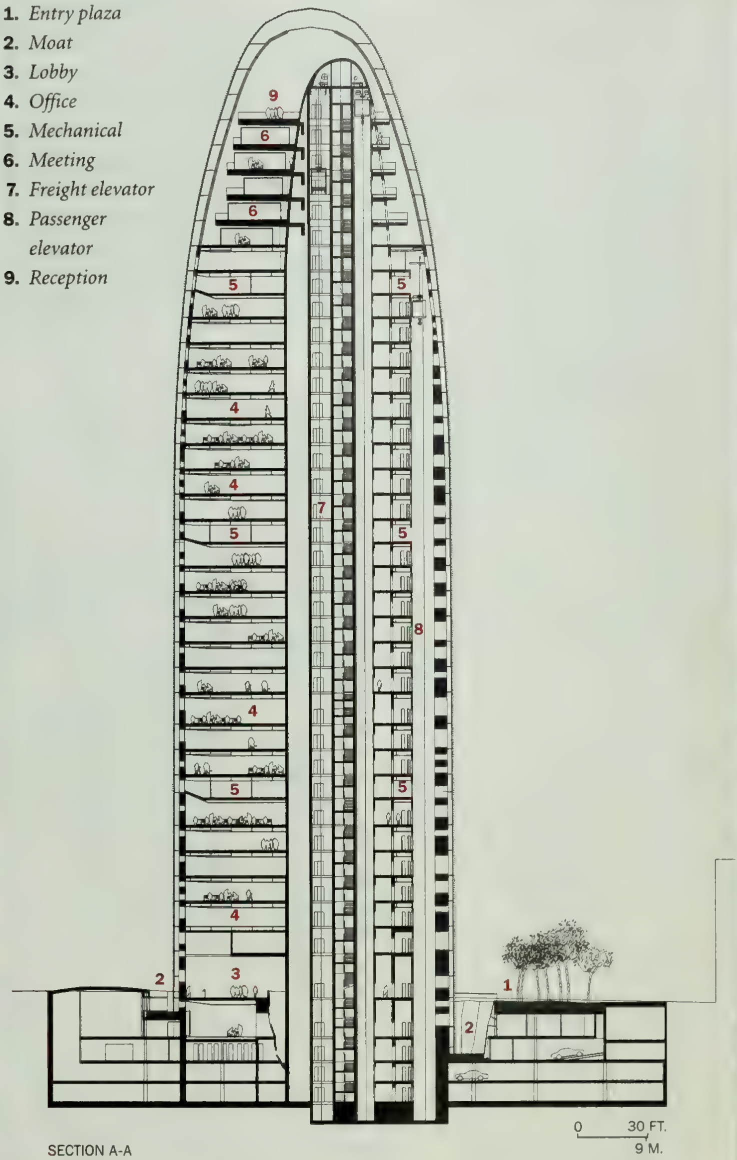
Project: *Agbar Tower, Barcelona*
Architects: *Ateliers Jean Nouvel, with b720 arquitectos—Jean Nouvel, Jean-Pierre Bouanha, Vander Lemes, Cristiano Benzoni, Pablo Garrido, Alexa Plasencia, Cristina Algás, Francisco Martínez, Elisabeth Farrés, Julie Fernández, Emmanuelle Lapointe, Pascaline Paris, Florence Rabiet, Juan Alberto Aibar, Marc Martínez, Doris Sewczyk*
Consultants: *R. Brufau & A. Obiol (structure); Gepro (HVAC)*
Contractor: *Dragados*

Nouvel's little joke

For a symbol, Nouvel's tower takes itself surprisingly unseriously. Agbar is the local water company, and Ateliers Jean Nouvel, with b720 arquitectos, has built for it a giant bubbler. The inky surface appears to ripple under a liquid film, sparkling through a jigsaw-puzzle of color.

Whether or not you are in on this little joke, Nouvel has created the most sensuous surface for a tower perhaps ever. It's the culmination of his long exploration of the tactile and visual qualities of surface. (Ghostly images of performers scud across the painted metal panels of Nouvel's Guthrie Theater, for example, which nears completion in Minneapolis.) The local project architect, Jean-Pierre Bouanha, explained on a visit how the surface of the tower was scribed into a 1-square-meter-grid (11 square feet), onto which was applied ridged, painted-metal panels over insulation. Below the uppermost floors (which are clad entirely in clear glass),





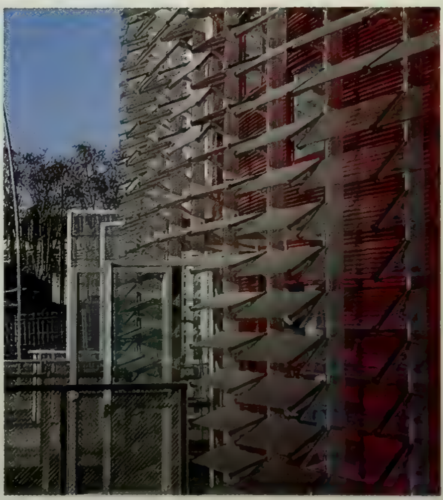
1. *Entry plaza*
2. *Moat*
3. *Lobby*
4. *Office*
5. *Mechanical*
6. *Meeting*
7. *Freight elevator*
8. *Passenger elevator*
9. *Reception*

SECTION A-A

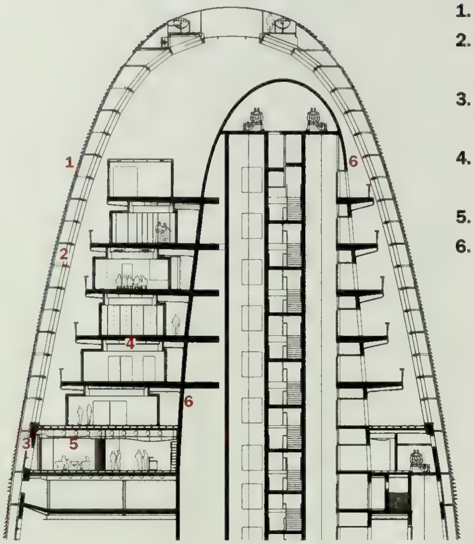
the metal panels descend in tints that vary from white through a range of blues. From the bottom, panels of orange, fuchsia, and red (inspired, Bouanha says, by the pink-tinted pinnacles of nearby Montserrat) rise to meet the veils of blue. Impishly, blotches of red spread amid the upper-level fields of blue; a lightening-bolt of yellow appears as if by accident; squares of green seem to grow near the shrubbery wrapping the base.

In Agbar, Nouvel abandoned the acres of gridded glass that are the signature of skyscraper office towers. Instead, he opened only about a fourth of the panels in an apparently random pattern as red-trimmed windows (in clear glass, except for a few tinted with integral film to enrich the palette). Another remarkable aspect of the design is that those windows are punched out of a continuous exterior concrete bearing wall that rises almost the entire height of the tower.

A layer of glass louvers covers the tower. Fixed and untinted, each glass blade is ceramic-fritted in dot patterns of a wide range of densities. The colored panels blur when seen through this varying glass scrim, which is why the surface seems to possess an indeterminate depth and liq-

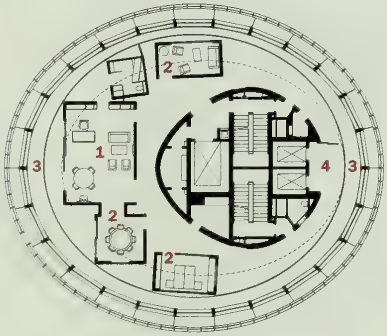


The rows of fixed, clear-glass, ceramic-fritted louvers that cover the tower hang from a framework (right) 27 inches outside the building envelope—making room for maintenance walkways floored in an openwork grille (opposite). The louvers add a liquid surface effect to the colored wall panels, dramatically enhanced by lighting at night (above).



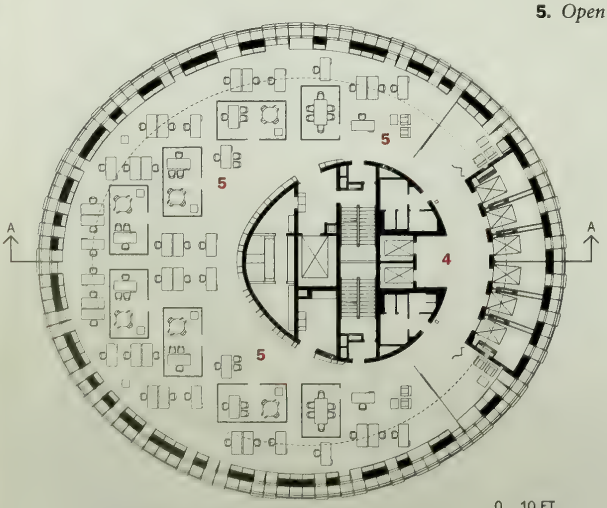
1. *Louvers*
2. *Glass-and-metal curtain wall*
3. *Exterior concrete bearing wall*
4. *Cantilevered concrete floor*
5. *Steel-beam floor*
6. *Core concrete bearing wall*

SECTION A-A AT DOME

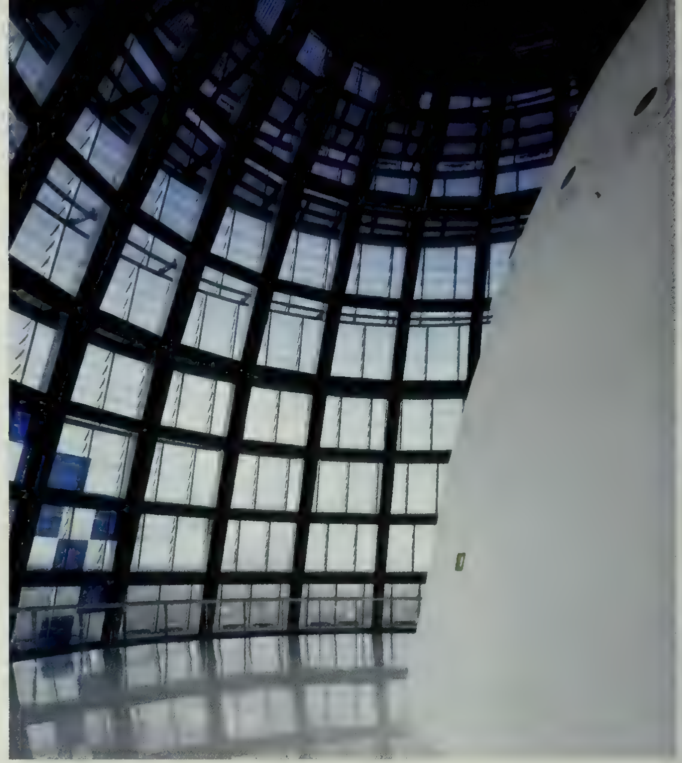


THIRTIETH FLOOR

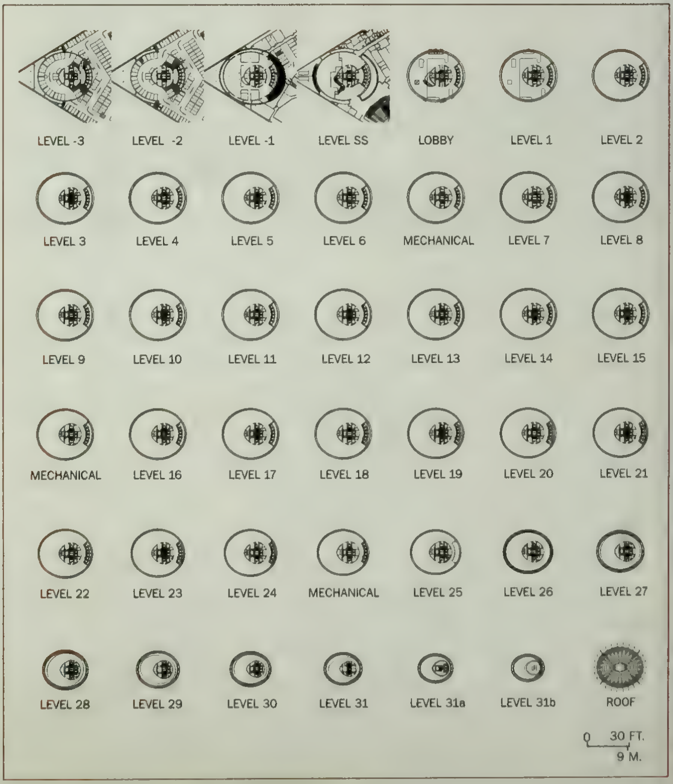
1. *President's office*
2. *Office*
3. *Open to below*
4. *Elevator vestibule*
5. *Open work space*

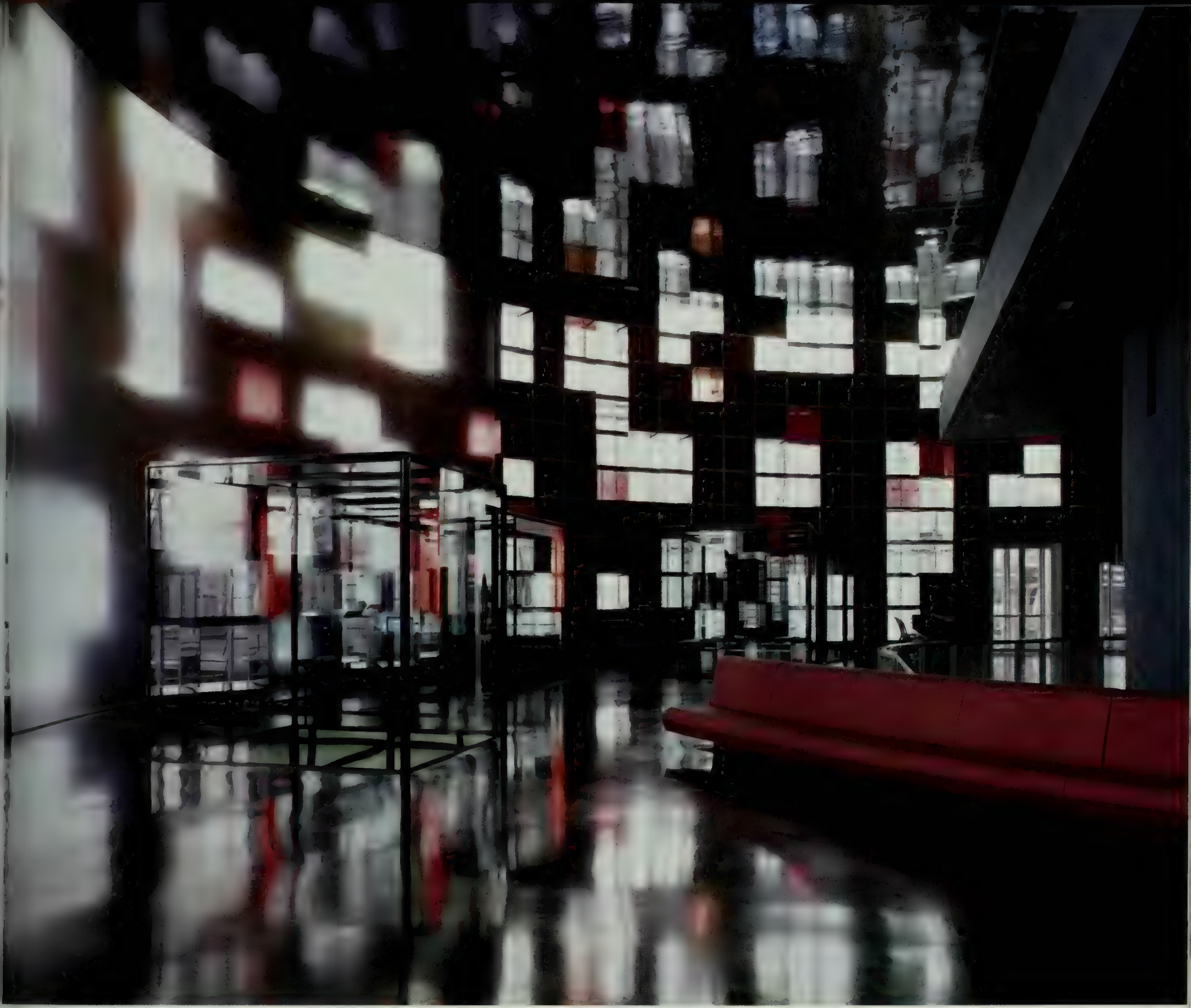


TYPICAL FLOOR



The uppermost tapering floors cantilever from the core (section, above left), free of nonbearing glass walls held on a grid of steel. They rise from the outer concrete wall to a fully glazed dome. The building's offset core (plans, below and left) rises to its own dome, visible within a top-floor reception space (above).





The shadowy lobby (above), with its reflective ceiling and floor, feels like a cool, fretworked arcade updated from the Alhambra. Windows lined in polished metal (left) diffuse light to reduce silhouetting.

uidity. The lobby previews the unique lighting effects inside with its long, high walls dotted with windows like a screen of flowing pixels. The visitor may be tempted to parse the contemporary cuneiform text they seem to form.

A modern-day bearing-wall tower

The concrete bearing wall, tapering from 19-inches thick at the base to just under a foot thick at the top, is a key element of a unique structural solution that maximizes clear-span space across the typical 10,800-square-foot floors. The concrete-framed stair and services core is offset rather than placed in the middle of the floor. Steel beams span from core to exterior wall to gain a column-free space that is both deep and broad. No one sits far from the window-wall, however, thanks to the oval plan. That is why the design can devote a chunk of the exterior to the main bank of elevators. Nouvel didn't let the window layout be dictated

Reflective ceilings (with coffers toned a warm champagne) gently diffuse the sharp daylight, which is also limpidly filtered through the milky patterned glass of partitions (top and middle). A masonry stair down from the lobby evokes the dark moat into which the tower visually disappears (bottom).

by conventional concerns about carrying structural loads in a direct path downward. Instead, steel reinforcing braces embedded in the concrete carry the loads around windows as needed.

By American standards, the layout is both counterintuitive and inefficient. Rectangular floor plates with a central core offer a theoretically higher proportion of usable space. Central cores, though, require a surrounding racetrack of wasteful circulation. They impede the easy communication of a layout that groups everyone together, as Agbar's floors do.

Both the shading of the louvers and the thickness of the wall cut the blinding Mediterranean light. The wall offers fewer openings and more heavily fritted louvers on the surfaces that receive maximum solar exposure, and more openings and less fritting where sun entry would be rare. Each floor frames a clear view to the Sagrada Familia.

A mutually reinforcing unity of structure and envelope

Bouanha plays down any notion that the Agbar is a "green" tower. Nouvel, in a statement about the design, writes only of querying the materiality of architecture, of creating a "paradox of weight and fragility." Yet the shading devices, the attention to orientation, and the use of the thermal mass of concrete to absorb solar heat, are all energy-reduction tactics well-attuned to sunny, generally dry climates.

This apparently mutually reinforcing unity of program, structure, and envelope has been a long time coming. You can see the offset core, the external elevators, and the diaphanous envelope in Nouvel's Tour sans Fin project of 1990. This project for Paris, regrettably unbuilt, remains an insightful and innovative skyscraper design more than a decade and a half after it was proposed. Our era's more prolific tower innovator, Norman Foster, was able to incorporate shaftlike, multilevel light wells (an idea Nouvel showed in the Tour sans Fin) in London's 30 St. Mary Axe [RECORD, June 2004, page 218], which resembles Agbar in its phallic shape. But the way the light wells chop up the floor plate of the London tower may prove too inflexible over time. And Foster's skin has an off-putting opacity very much in contrast to Agbar. (Agbar, it must be said, crashes into its plaza with considerably less delicacy than the inwardly tapering base Foster's team devised.)

When Nouvel describes this tower using such terms as "l'aventure de l'evanescence," you get the idea that the design focus is almost purely aesthetic—an odd choice if you consider skyscraper history as largely a march toward the most efficient means of placing more people on less property. The arbitrary aspects (like the window placement) suggest Nouvel is operating outside the usual cost-driven norms—as indeed he is by American standards. He realized that the look is part of the sell (in Barcelona's urban development terms), but the insightful integration of that Technicolor exterior with a brilliantly reimagined structure and plan may prove to be of lasting influence. ■

Sources

Exterior cladding, curtain wall: *Fractal; Permasteelisa*

Windows: *Technal; St. Gobain (glass)*

Skylights: *Colt*

Aluminum: *Hydro*

Entrances, doors: *Dorma; Fichet*

Hardware: *Dorma*

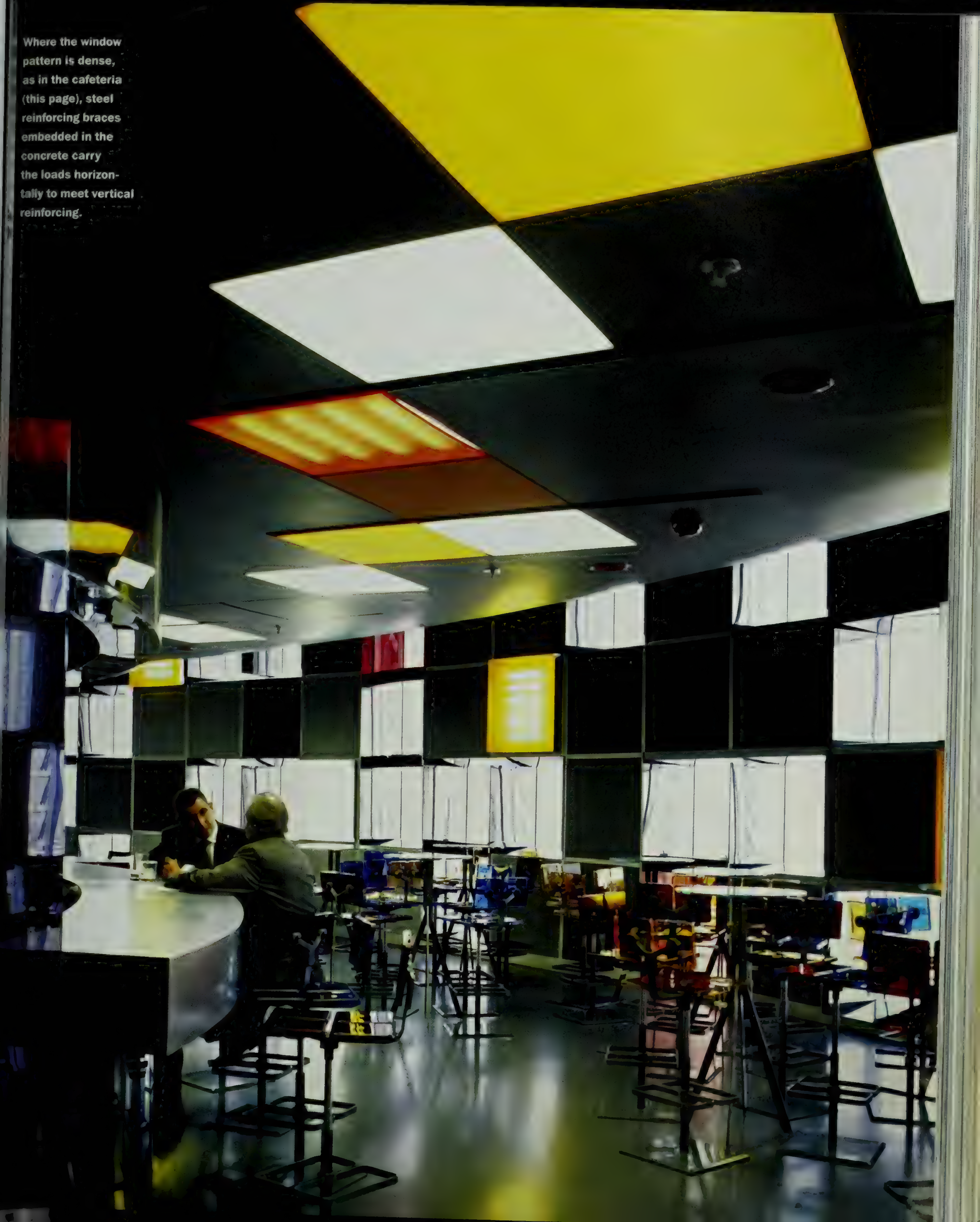
Acoustical ceilings: *Erco*

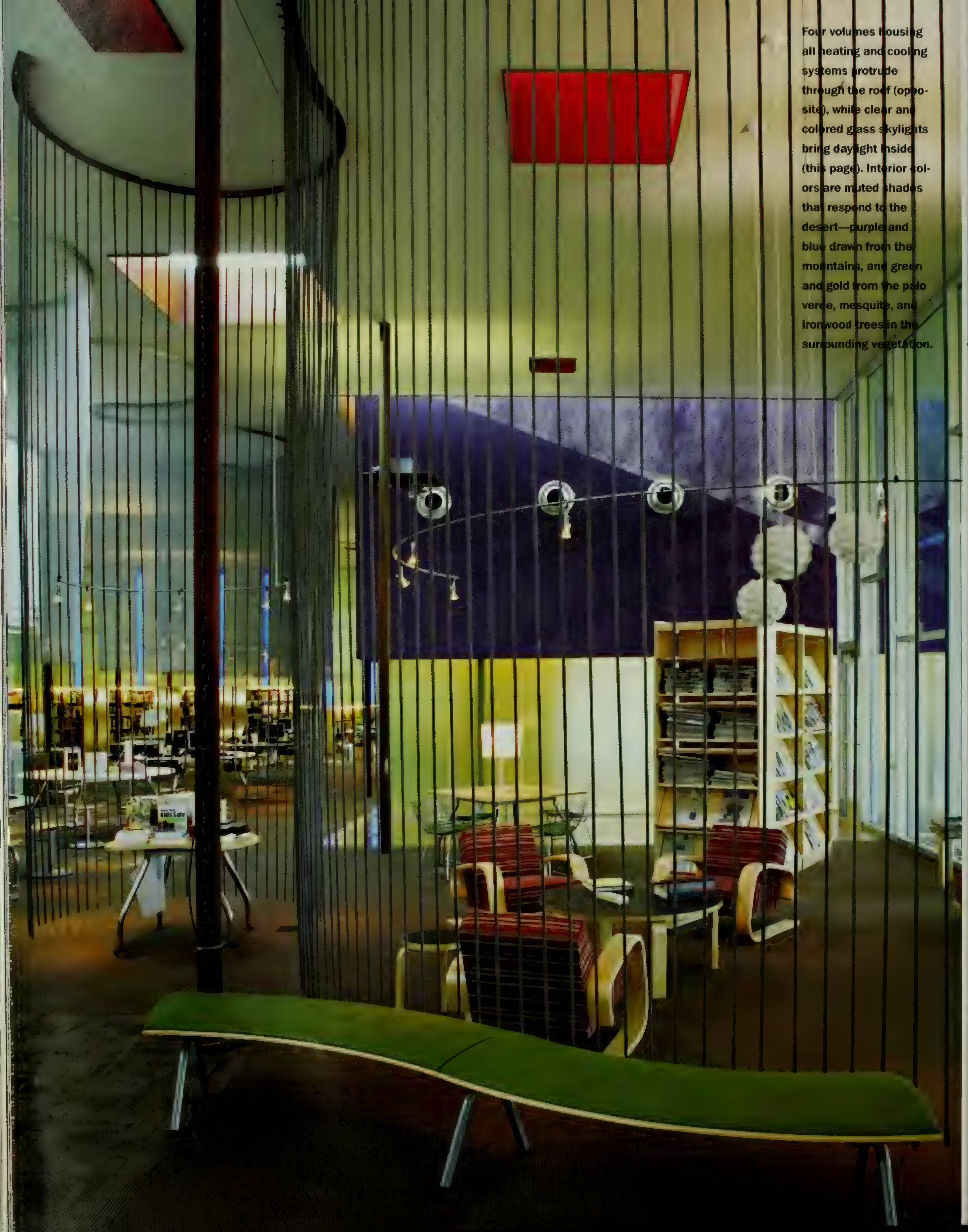
Tiles: *Pavimentos Mata*

Paint: *Tollins (interior concrete)*

For more information on this project, go to Projects at **www.archrecord.com**.

Where the window pattern is dense, as in the cafeteria (this page), steel reinforcing braces embedded in the concrete carry the loads horizontally to meet vertical reinforcing.

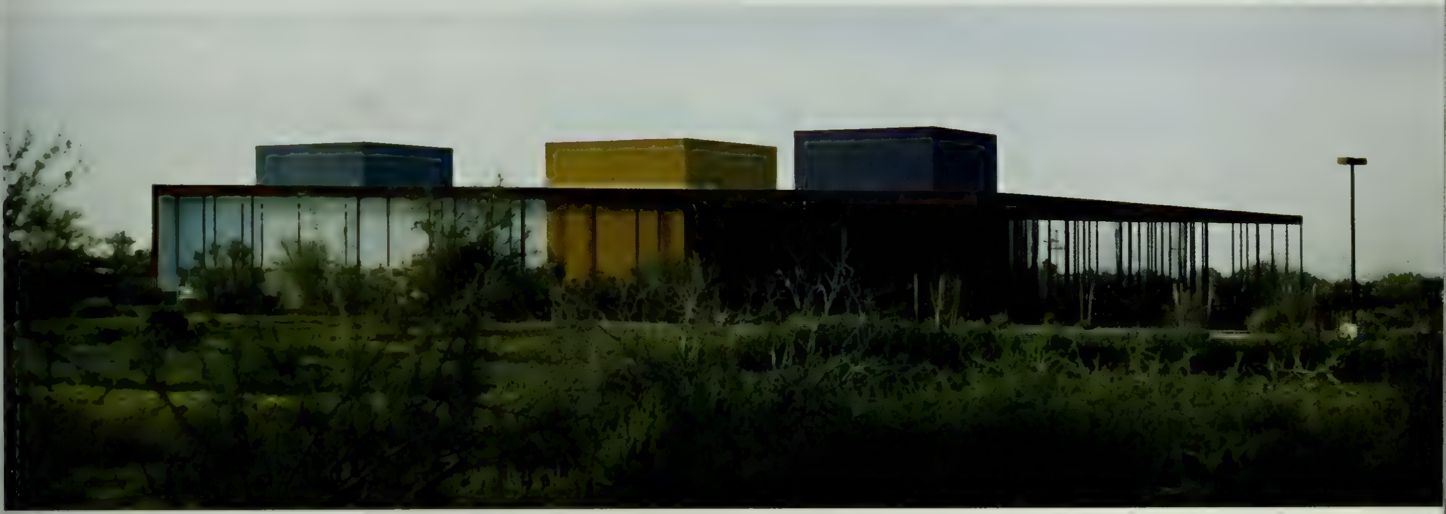




Four volumes housing all heating and cooling systems protrude through the roof (opposite), while clear and colored glass skylights bring daylight inside (this page). Interior colors are muted shades that respond to the desert—purple and blue drawn from the mountains, and green and gold from the palo verde, mesquite, and ironwood trees in the surrounding vegetation.

PHOTOGRAPHY: COURTESY RICHARD + BAUER, BY BILL TIMMERMAN

Richärd+Bauer designed the new **DESERT BROOM LIBRARY** in Phoenix as a nurturing presence on an untamed site



By Ingrid Spencer

Whether the result of Will Bruder setting a new standard for library design with his 1995 flagship Phoenix Central Library, the city's 2001 move to make the Phoenix Public Library (PPL) a separate city department, or the rainmaking by Toni Garvey, the city's dynamo of a head librarian, Phoenix continues to build libraries that break the mold and redefine the building type. With the completion of the 15,000-square-foot Desert Broom Library, in north Phoenix, Richärd+Bauer takes the concept of redefinition to another level, creating a striking yet harmonious addition to the desert landscape, clad in weathered steel.

Phoenix, the nation's sixth-largest city, with a population of nearly 1.5 million, has given the PPL, with its 14 public libraries, the freedom and support it needs to create its identity with new services, new branches, and a new attitude about library design. "Cities can go in one direction or another with libraries," says Garvey. "They can go with a cookie-cutter, or they can create libraries that make a statement."

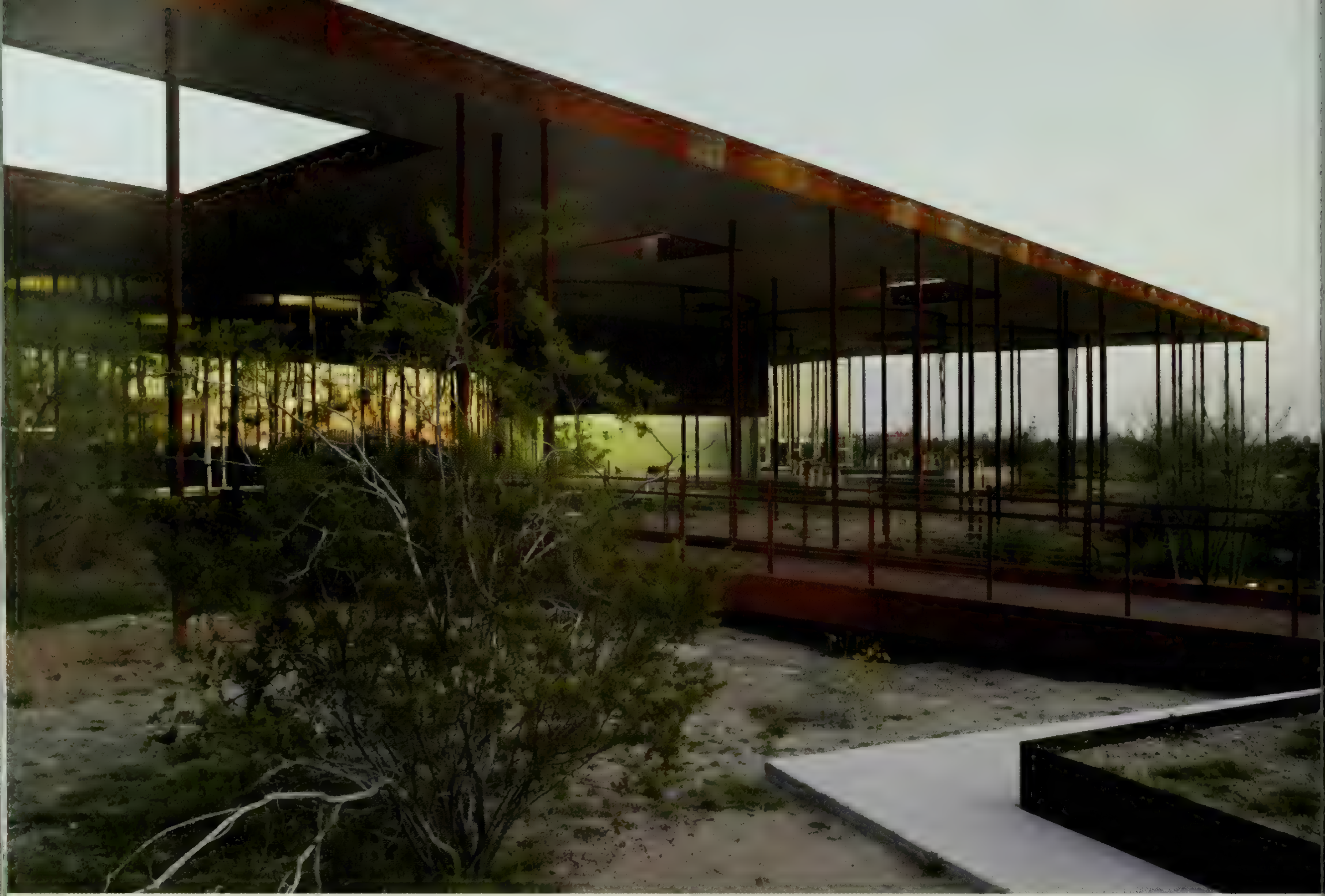
Richärd+Bauer had worked on several libraries within Phoenix and nearby Scottsdale, including a renovation of a Bruder-designed branch. Its latest project, which includes a park, was a chance for the firm to create a destination that would qualify for LEED Silver status, sit gently on the virgin desert landscape of its 45-acre site, and stand out without imposing on the land. "Communities are erasing the desert," says principal Jim Richärd, AIA. "We wanted to build responsibly. Also, in this kind of site, little cornices don't mean anything. You need big gestures."

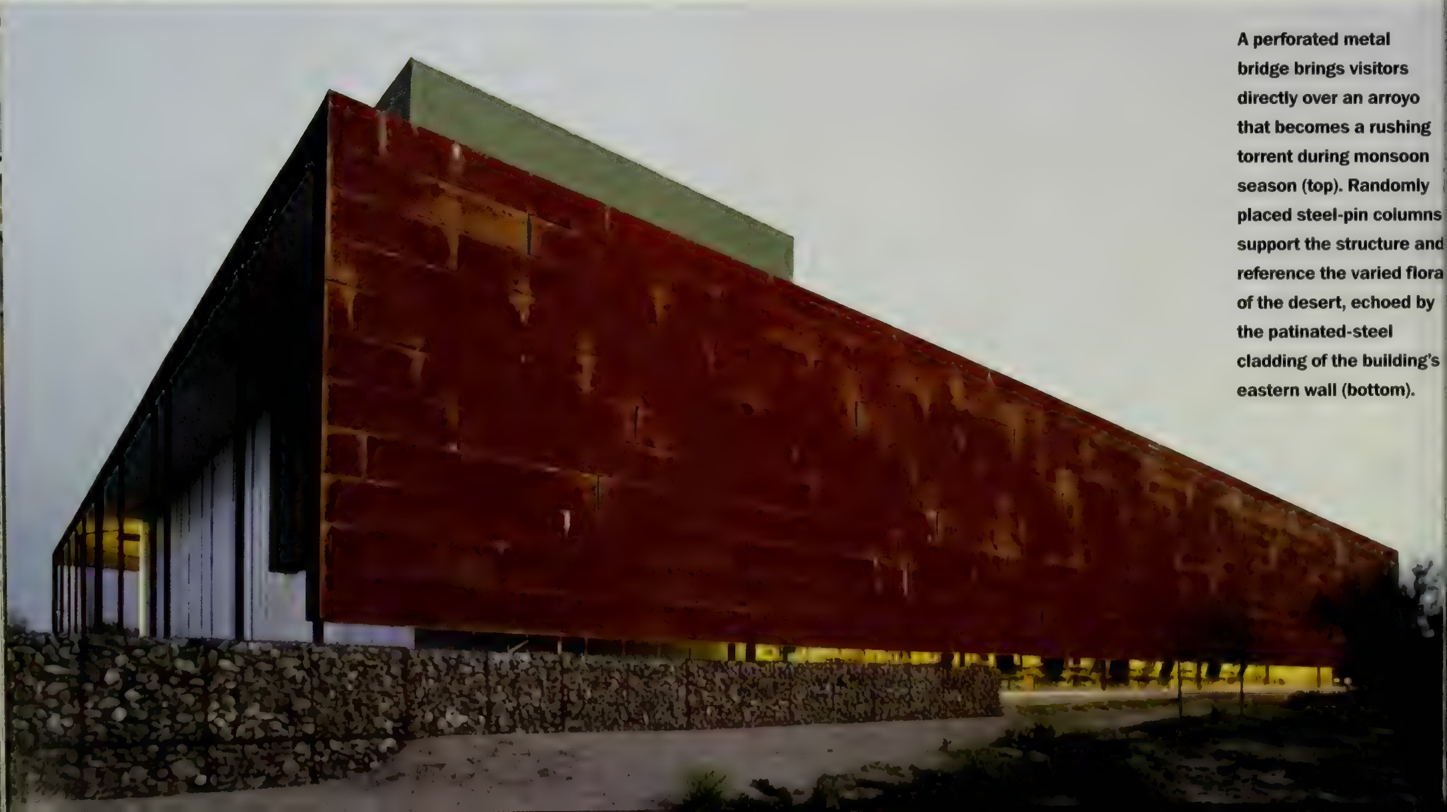
For Richärd, building in the arid Sonoran Desert meant preserving the authenticity of what was there. Desert Broom's site, with its braided streams, arroyos, and abundance of wild brush and saguaros, offered a metaphor that gave the project direction. A young saguaro needs the shade and nutrients provided by an older, stronger tree or shrub, and the design of the library embraces the metaphor physically—the library's 25,000-square-foot roof extends 60 feet from the building, to shade visitors and provide comfortable outdoor spaces—and philosophically. "Libraries nurture intellectual growth," says Richärd. "We took that concept a few steps further."

The brain nourishment begins before you even get to the front door of Desert Broom. The building and parking lot are nestled in desert wilderness, and visitors approach the entrance from the northwest, crossing over an arroyo on a perforated-metal bridge. Immediately, the right angles of the building are contradicted by a random pattern of slender, 4-inch-diameter steel columns that continue throughout the building and

Ingrid Spencer is a contributing editor and former managing editor of ARCHITECTURAL RECORD. *She writes about design from her home base in Austin, Texas.*

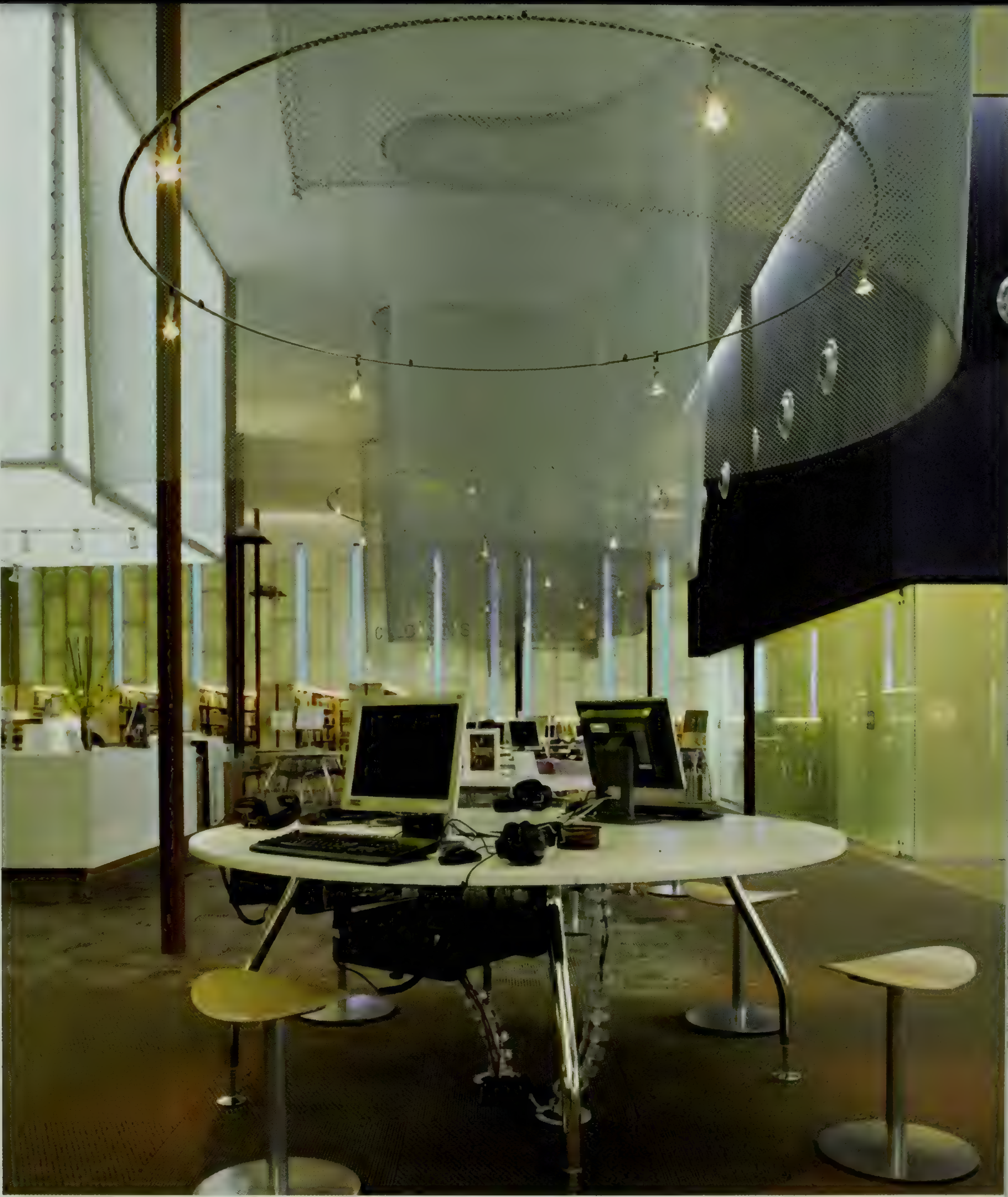
Project: *Desert Broom Library, Phoenix, Arizona*
Architect: *Richärd+Bauer—Jim Richärd, AIA, principal; Steve Kennedy, AIA, Erik Koss, project architects*
Interior designers: *Kelly Bauer; Stacey Kranz*
Engineer: *KPFF (civil and structural)*
Landscape consultant: *E-Group*
General contractor: *Linthicum Constructors*

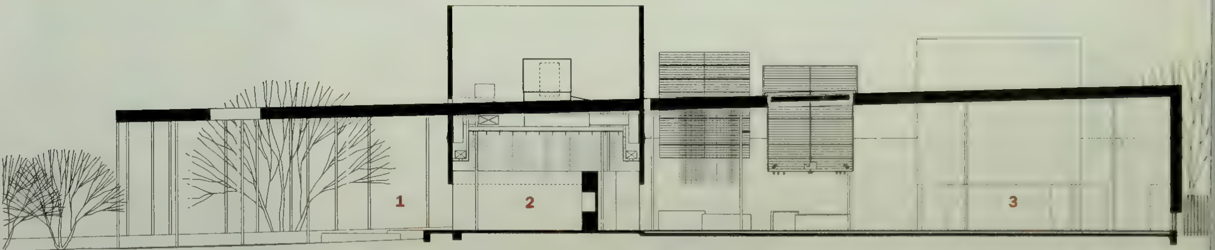




A perforated metal bridge brings visitors directly over an arroyo that becomes a rushing torrent during monsoon season (top). Randomly placed steel-pin columns support the structure and reference the varied flora of the desert, echoed by the patinated-steel cladding of the building's eastern wall (bottom).

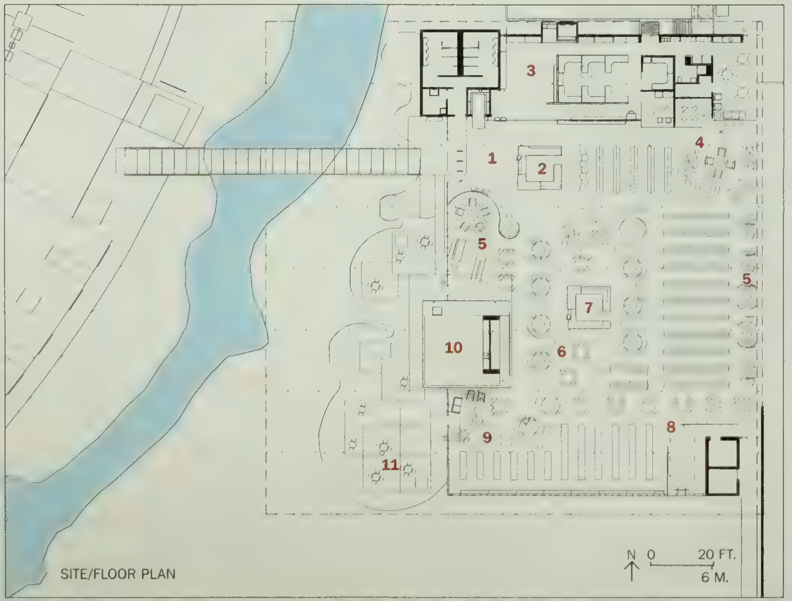
Materials are honest and sustainable throughout, as in the information desk (left in photo, right) that is made of recycled soft-drink bottles. Also made of recycled materials are the removable carpet tiles throughout the space, which allow for flexible computer plug-in stations.





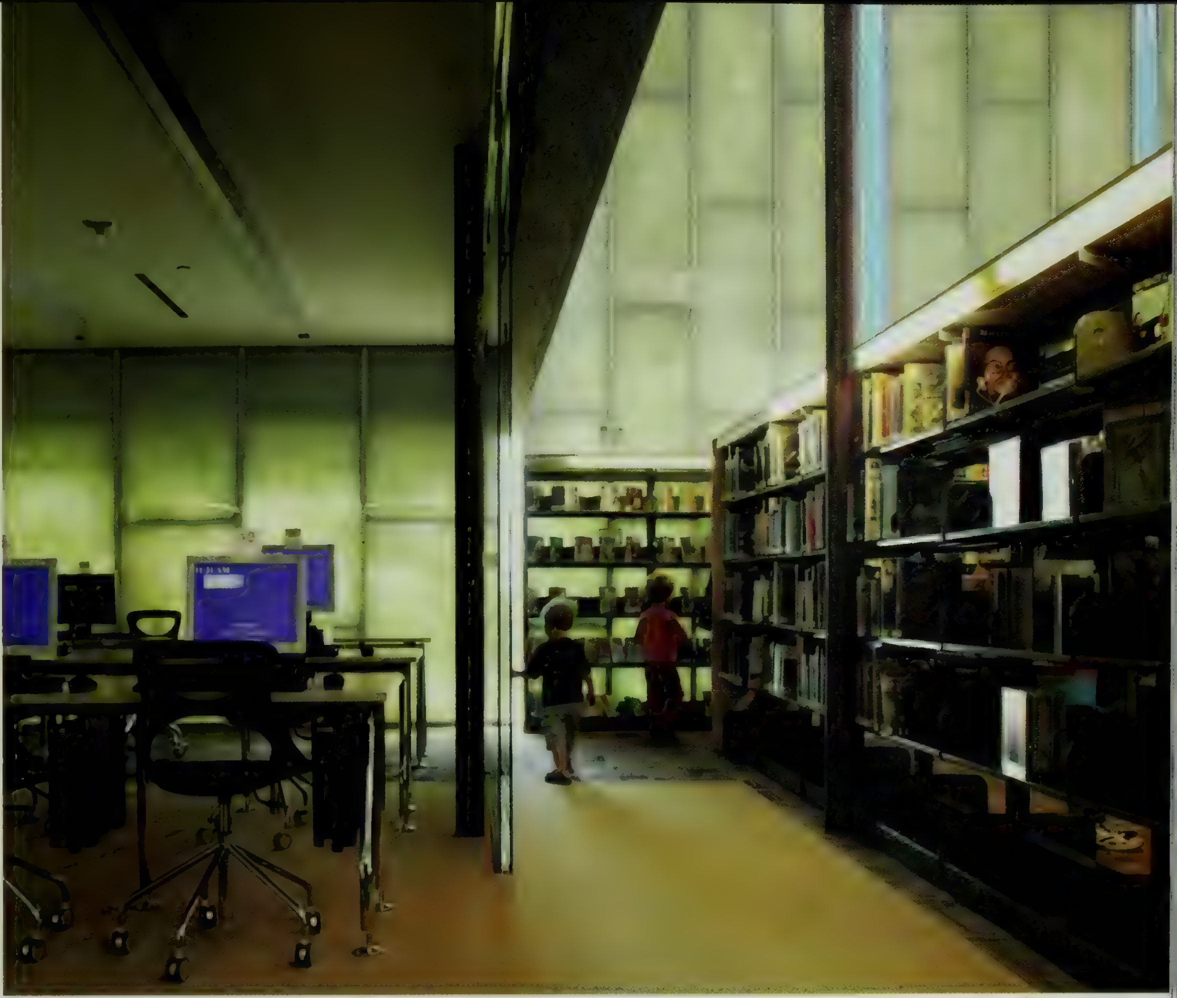
1. *Reading terrace*
2. *Meeting*
3. *Stacks*

EAST-WEST SECTION



1. *Lobby*
2. *Service desk*
3. *Staff*
4. *Teens*
5. *Lounge*
6. *Computer resources*
7. *Information desk*
8. *Computer training*
9. *Children*
10. *Meeting*
11. *Garden terrace*

Wavy screens of rebar keep critters out of outdoor reading spaces, which are positioned for maximum viewing of the spectacular desert sunsets (opposite). Inside, a temporary wall of glowing polycarbonate panels allows daylight in the stacks area and eliminates the need for harsh overhead lighting (right).



support the overhanging roof.

Looking surprisingly delicate, strands of metal rebar stand in curtainlike waves under the roof's great overhang, defining the library's outdoor spaces without totally enclosing them. In other places, a series of openings penetrate the roof, allowing light to come through, unfiltered outside and distilled through colored and clear glass inside. Indoors, the architects echoed the rebar waves with undulating screens of metal mesh, delineating certain areas, such as a lounge and computer-resource tables.

"Libraries are not 'shush' places anymore," says Garvey. "They are destinations, places where people can get together to communicate." Richärd agrees. "Libraries compete with bookstores now. We're building coffee bars into them, and teen-only sections."

While Desert Broom doesn't have a café, it does have shelves loaded with enough multiple copies of recently released DVDs to put the local Blockbuster to shame; self-checkout areas; a meeting room sectioned off with frosted glass; staff and computer training areas; a teen section with listening stations for audio CDs; and reproductions of classic Midcentury Modern furniture scattered about for those visitors who actually came for the plentiful supply of books or magazines.

Those who do come to read will do it in comfort—without a smidgen of harsh overhead lighting. Instead, skylights provide daylight, as do low windows, which keep out the harsh midday sun and allow views of the rustic landscape. Custom-made stacks have their own fluorescent lights built in. Other comforts include high-efficiency mechanical units for HVAC, enclosed in the tops of each of four colored cubes protruding from the roof. Heated or cooled air moves directly into the open space from each one of these volumes, eliminating the need for overhead ductwork. In the outside seating areas, where dramatic sunsets can be seen when the closing time permits, building relief air (which is usually thrown out the top of the units on the roof) heats and cools the space.

While the southeast wall of the building is clad in Cor-Ten steel panels patinated to a rusty brown, the southwest wall of the library—in anticipation of expansion—features a double layer of polycarbonate panels with cotton insulation stuffed in between. Daylight seeps through the translucent panels and renders the wall a glowing conclusion to the space.

"The building is like a found object in the desert," says Richärd, who is also a pilot, and has surveyed the area from above. The community's response has been strong. Using cars, not planes, more than 2,000 people found the library on its opening day, and the PPL is already on to the next phase, planning more branches and renovations. "Libraries are about possibilities, and change," says Garvey. "We're keeping up." ■

Sources

Structural Steel: *Maricopa Metals*

Curtain wall: *Elwary Construction (steel wall panels); Mirror Works (glazed aluminum, polycarbonate)*

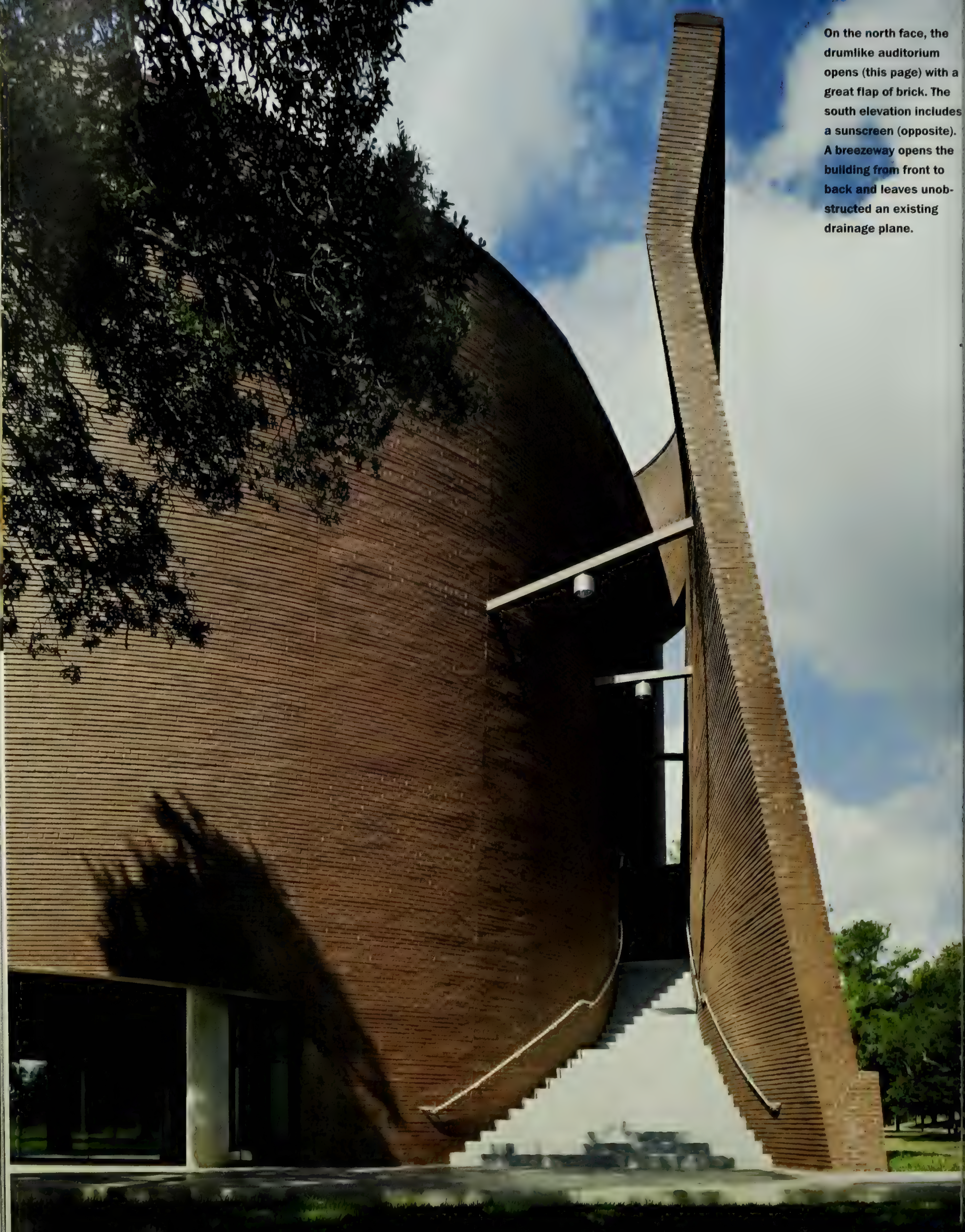
Plastic laminate: *Nevamar*

Flooring: *Econights; Crossville; Shaw (carpet tile); InterfaceAR*

End panels: *Polygal*

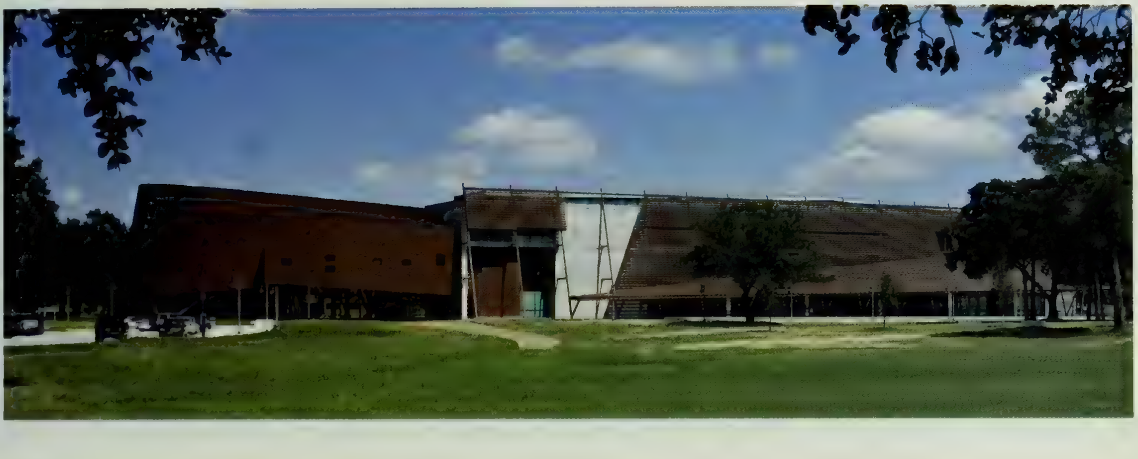
Lighting: *Tech Lighting; Erco; Delta Light; SporLight; Se'Lux; Bartco; Abolight; Lithonia*

For more information on this project, go to Projects at **www.archrecord.com**.



On the north face, the drumlike auditorium opens (this page) with a great flap of brick. The south elevation includes a sunscreen (opposite). A breezeway opens the building from front to back and leaves unobstructed an existing drainage plane.

Teaching by example, ROTO raises brickwork to imaginative new levels with the ARCHITECTURE AND ART BUILDING at Prairie View A&M in Texas



By Sarah Amelar

At first, we were afraid to ask the brick what it wanted to be," says Michael Rotondi, FAIA, of his design for the Architecture and Art Building at Texas's Prairie View A&M University. "What if it still wanted to be an arch? But then the answer came: It wanted to dance." So, Rotondi; his partner, Clark Stevens, AIA; and their firm, Roto, experimented with the material, creating a sheathing, with great rhythmic pleats and gaping flaps, that billows like a huge, windblown garment.

Brick was a given, mandated by the campus planning guidelines. But Rotondi, a seasoned educator, who had headed the Southern California Institute of Architecture (SCI-Arc) for a decade, saw this requirement—and the entire project—as an opportunity to challenge the conventions of materials and spark the imaginations of architecture students.

In interviewing for the commission, Rotondi told Ikhlas Sabouni, Prairie View's dean of architecture, that he was ready to "download 30 years of experience as an architect and educator." He proposed not only to review the curriculum, but also teach the students, as part of the design process. With the search committee's approval, Sabouni soon signed on, dedicated, as she puts it, to finding "an architect of national renown, who'd create a laboratory for design, a beautiful structure that students could learn from."

Just as Rotondi had been eager to embrace Native American culture when he built at Sinte Gleska University, on South Dakota's Rosebud Reservation [RECORD, November 1999, page 84], he hoped to gain an understanding of Prairie View's culture. Historically, this 130-year-old branch of Texas A&M University, sited 45 miles northwest of Houston, has had a predominantly African-American student body. In 2000, the school won a $190 million Office for Civil Rights settlement to compensate for long-term denial of adequate financial resources. The university allocated the funds for four new structures for the following disciplines: architecture (which shared a building with engineering), nursing, juvenile justice, and electrical engineering. In addition to the architecture school, with its 225 undergraduate and graduate students, Roto's $20 million, 108,000-square-foot building would house construction-science and community-development programs, as well as the Community Urban Rural Enhancement Service and the Texas Institute for the Preservation of History and Culture, with its focus on African-American contributions to the state.

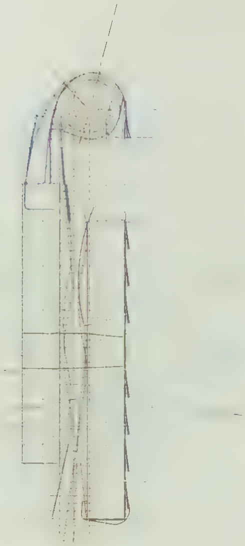
Rotondi began interacting with the students through nonarchitectural, almost meditative exercises aimed, he says, at "heightening awareness, concentration, and focus," while opening windows to their subcultures. After getting his pupils to savor and describe the textures and unfolding flavors of "a fresh food item that a grandmother would prepare," he asked them to bring in a favorite piece of music. They diagrammed what they heard on 6-foot-long pages, tracing melodic lines and rhythmic structures, and relating the drawings back to the body's movement through space. "From gospel and rhythm and blues to bluegrass, all the music had roots in East or West Africa," the architect says. "So, right there, in those incremental rhythms and long melody lines, we found our building's ordering system."

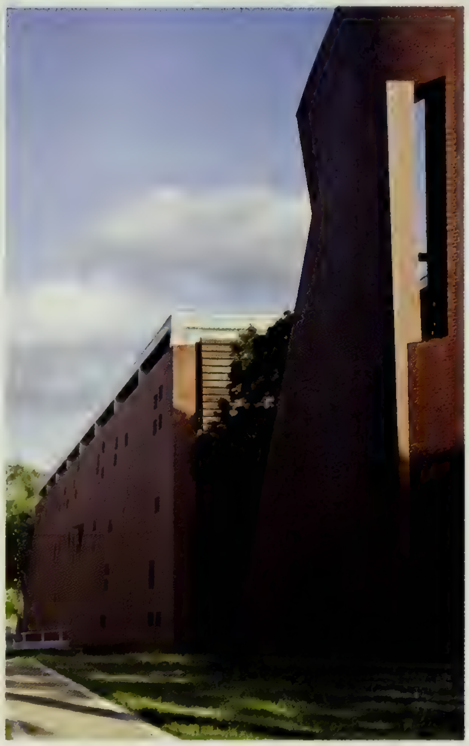
Though Rotondi considered various partis, he settled on a long configuration with a central space and linear arrangement of studios—a diagram that had proved successful in SCI-Arc's latest incarnation. Prairie View initially offered him a site buried at the back of the campus, but Rotondi convinced the university president (a man committed to architecture as an educational tool) to place the building as a gateway to the school.

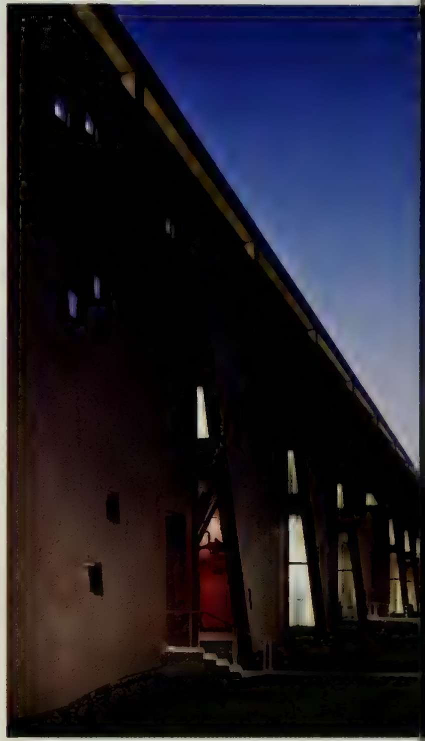
As realized (in conjunction with HKS), the three-story, 450-foot-long, concrete-framed structure presents its most eclectic face on its south, or entry, side. Here, a curving shell of brick wraps the cultural center, at the building's west end, while a brise-soleil of painted, perforated steel veils

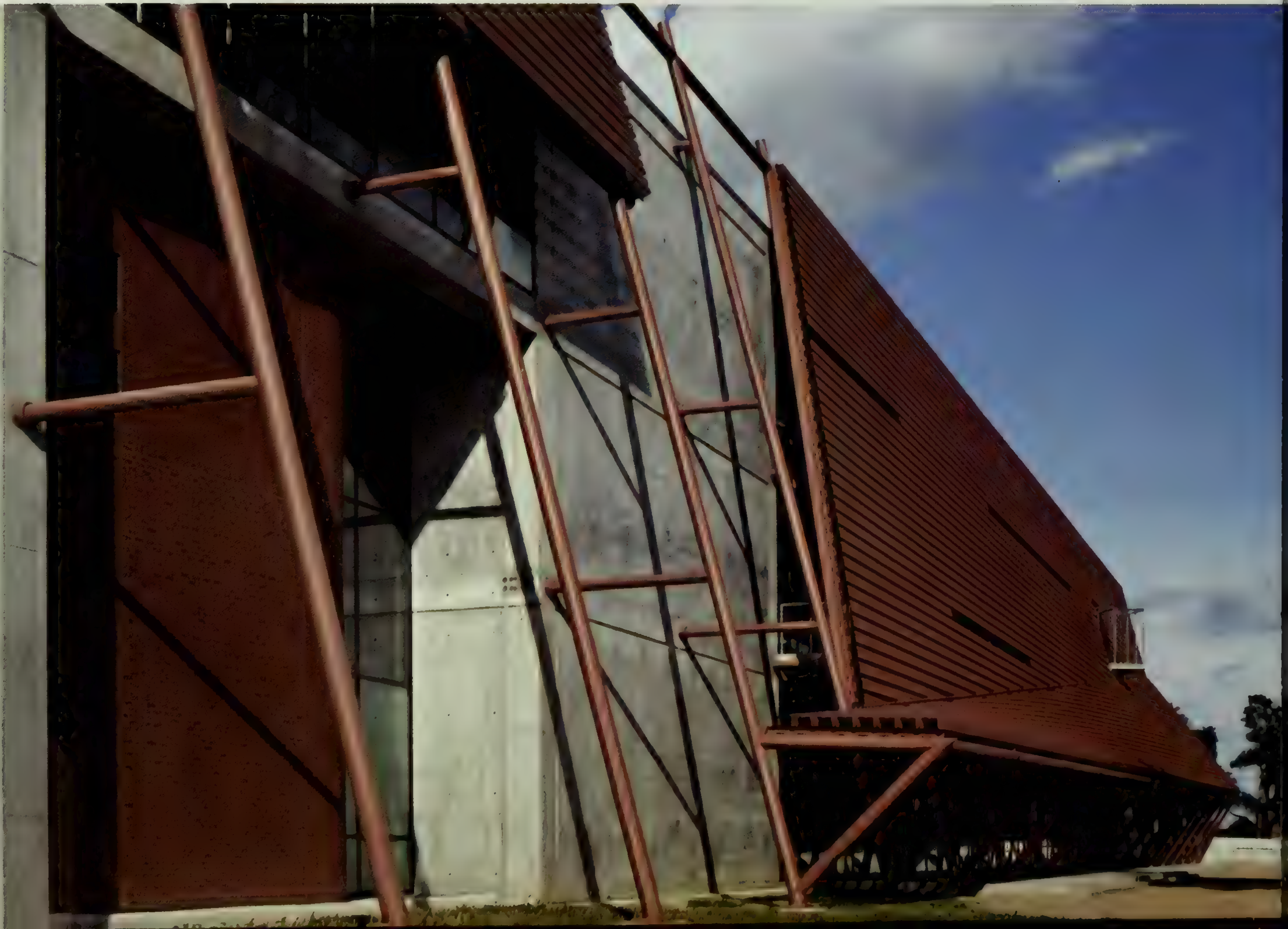
Project: *Architecture and Art Building, Prairie View A&M University, Prairie View, Texas*
Architects: *Roto Architects—Michael Rotondi, FAIA, Clark Stevens, principals; Tom Perkins, project architect; Jim Basset, Alyssa Holmquist, Devin McConkey, Sergio Ortiz, Otoniel Solis, Jack Nyman, John Lessl; HKS—Jess Corrigan, AIA, principal*

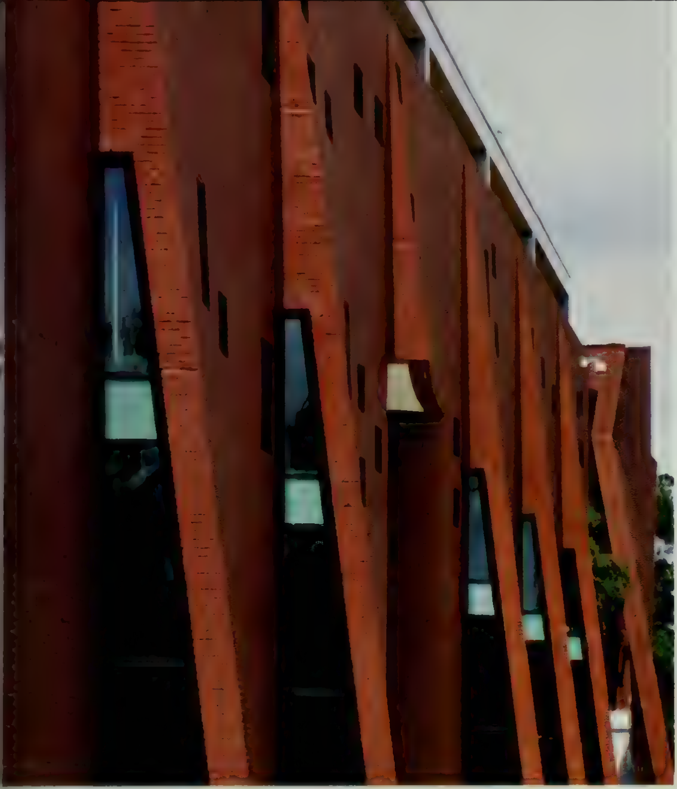
A rhythmic diagram (below) shows the plan's ordering system. A live oak (near right) was preserved and integrated with the north elevation, which fans out like a skirt (far right). A sunscreen (bottom) veils south-facing studios.

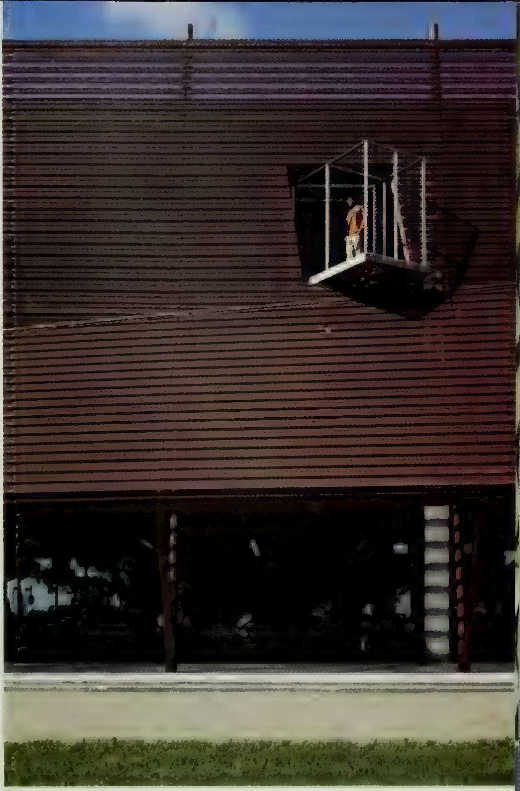




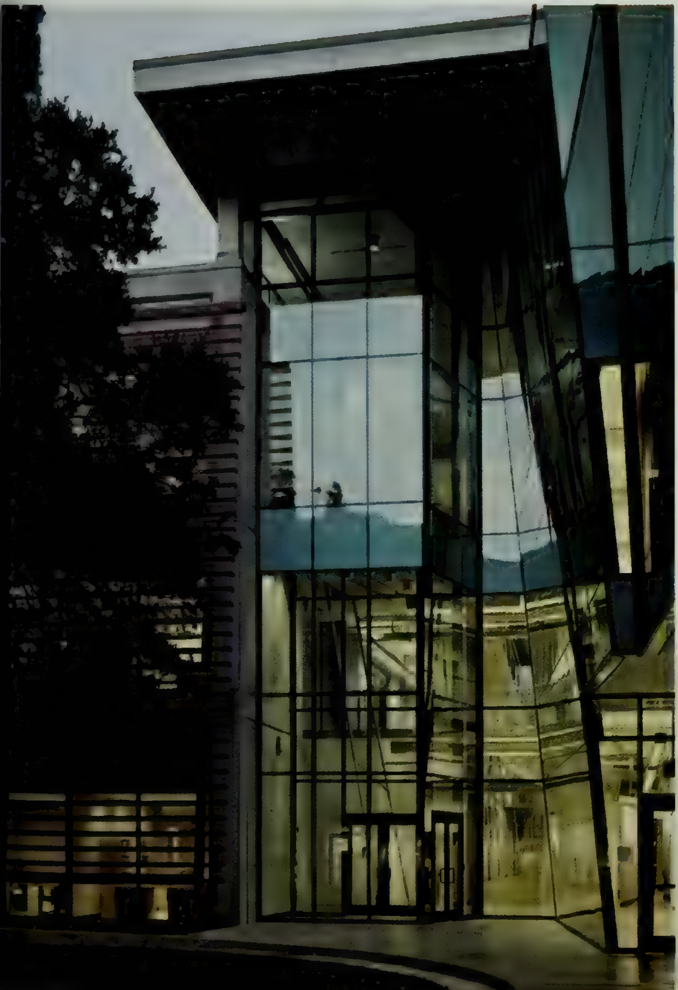








On the north elevation, small, punch-card apertures in the brick walls play against large, triangular windows in the perpendicular spaces between wall planes (left). The glazed north entrance forms pleats and folds around the existing live oak tree (below). A small balcony—or penalty box, as Dean Sabouni jokingly calls it—penetrates the brise-soleil, providing a break-out space from the architecture studios, while the art studios, on the ground floor, can open with glassy, roll-up garage doors (right).



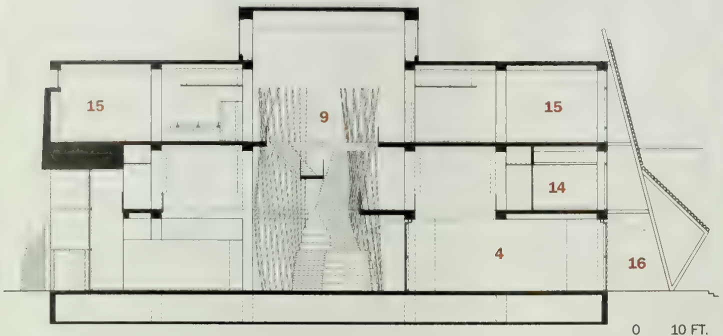
glazed architecture studios to the east. Though this elevation offers the project's most collaged and even disjointed composition, the contrasting materials and forms effectively distinguish among the functions within. And the sunscreen, dipping toward the ground, mediates between the prairie grasses in front of the building and the campus behind it, while alluding to a shady Southern front porch.

As if entering a truly lived-in home, students typically access the building not from its formal street approach, but from the back, or campus, side to the north, where an ancient oak tree commands an entry courtyard. Here, on the north face, the brickwork becomes extraordinary. Using old-fashioned, wire-cut clay bricks, instead of the more artificial-looking versions that clad the surrounding buildings, Roto inventively explored corbeling, displaying a jubilant range of possibilities in full view of the students. The skin, with mortar matching the deep orange bricks, wraps the cylindrical auditorium like taut fabric, flaring out toward the base. Like a monumental flap swaying in the breeze, a wall of brick opens from the drum, creating an interstitial space, where stairs spill out from the theater.

Farther down the long north elevation, a series of canted walls fan out beneath the roofline, creating in-between spaces for tall triangular windows perpendicular to the wall planes. Playing against these large openings, small punch-card apertures punctuate the planes of brick. If the battered masonry and little windows evoke a fortress, it is one transformed by an accessibly human scale and sense of whimsy. The inventiveness continues, for example, where the walls surge out at their bases, transforming the geometry as they undulate up to crisp, 90-degree angles at the top. Paradoxically, the brickwork expresses heft or solidity, but billows like a skirt.

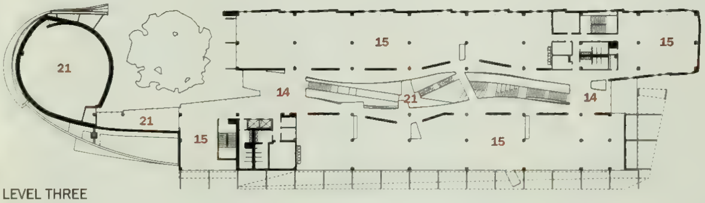
The craft of bricklaying, Rotondi says, was originally brought to this region by African-American slaves. At Prairie View, the architect encouraged his bricklayers to use traditional hand methods in new and creative ways, fine-tuning the corbels to enhance the walls' sculptural qualities.

For the interior, Roto produced a central circulation "canyon" that

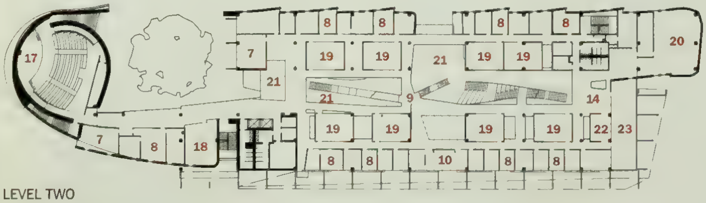


SECTION A-A

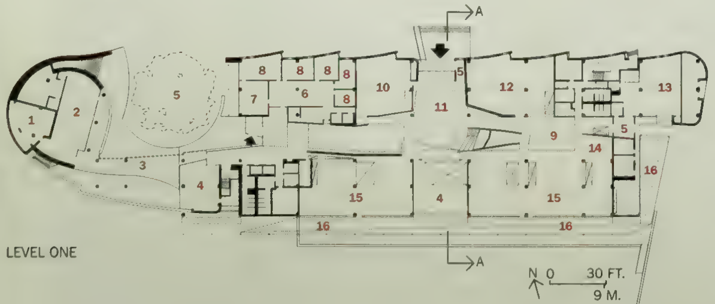
1. *Cultural archive*
2. *Cultural gallery*
3. *Breezeway*
4. *Gallery/pinup area*
5. *Existing oak tree*
6. *Administration*
7. *Conference*
8. *Office*
9. *"Canyon"*
10. *Lecture hall*
11. *"Main space"*
12. *Art studio*
13. *Wood/metal shop*
14. *Lounge*
15. *Architccture studio*
16. *"Porch"*
17. *Theater/lecture hall*
18. *Reference library*
19. *Classroom/seminar*
20. *Computer lab*
21. *Open to below*
22. *Café*
23. *Roof deck*



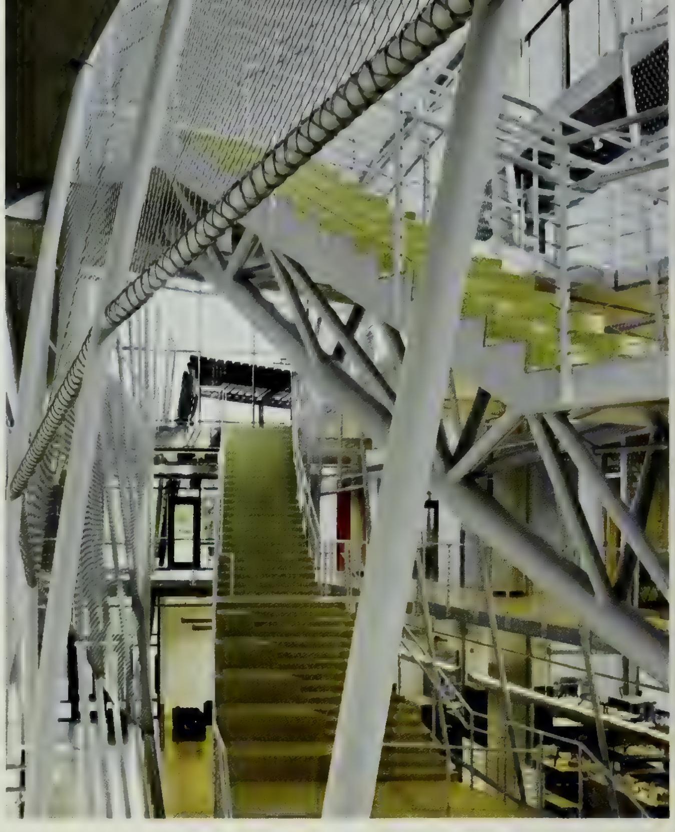
LEVEL THREE



LEVEL TWO



LEVEL ONE



extends up the building's three stories, providing an informal amphitheater and gallery/pinup space. This central zone is crossed by a web of catwalks, and stairs on tubular steel trusses that swoop like roller coasters. Scrims of steel cable net, resembling chain link, partially screen the area, not only defining a space within a space, but also producing moiré effects, animated by abundant daylight from the canyon's clerestory and end windows. Slender steel columns, supporting the slung steel net without reaching the ceiling, lean like casually planted wooden stakes, adding to the dynamism.

From the canyon, little remains hidden, with glass-fronted administration and art studios on the ground floor, offices on the second, and architecture studios at the top. The interior glazing invites views into work spaces, stimulating cross pollination. "Multipurpose 'piazzas' or social areas are where idea exchange really happens," says Rotondi. And because the "melody line"—long concrete floor slabs flanking the central zone—forms a quiet datum, the interior achieves balance, keeping the rhythmically charged circulation elements from becoming distracting or overwhelming. While Rotondi sees SCI-Arc's home as "neutral, enduring, and forgiving in its industrial nature" and Alvar Aalto's Helsinki architecture school as "intimidating in its perfection," he considers Prairie View a middleground: an architectural presence that is neither totally neutral nor overpowering.

Hardly intimidating, the "dancing" new building has inspired everyone, reports Dean Sabouni, to spend more time at school, a place they helped create. Certainly, the scheme emerged from an ongoing dialogue, a true give-and-take, between students and architect. But that was just the beginning: The degree candidates, actively engaging a new set of architects, are already vetting designs for the next three structures on campus. ■

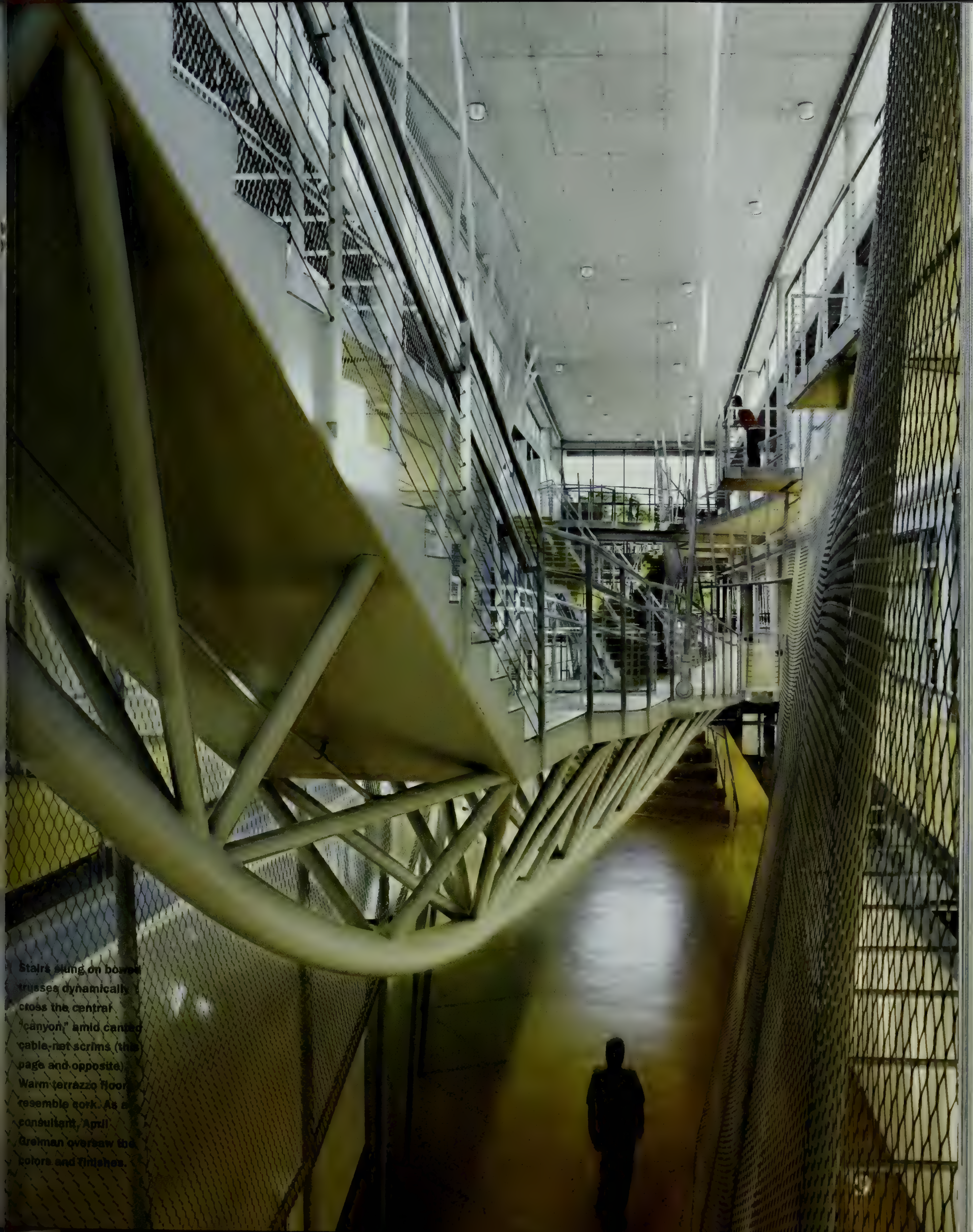
Sources

Brick: *Acme Brick*

Sunscreen: *Beck Steel*

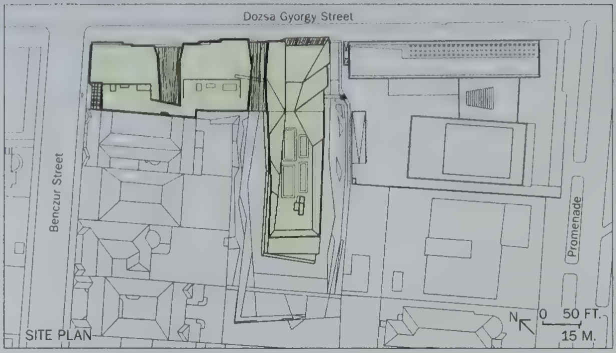
Glazing: *Viracon*

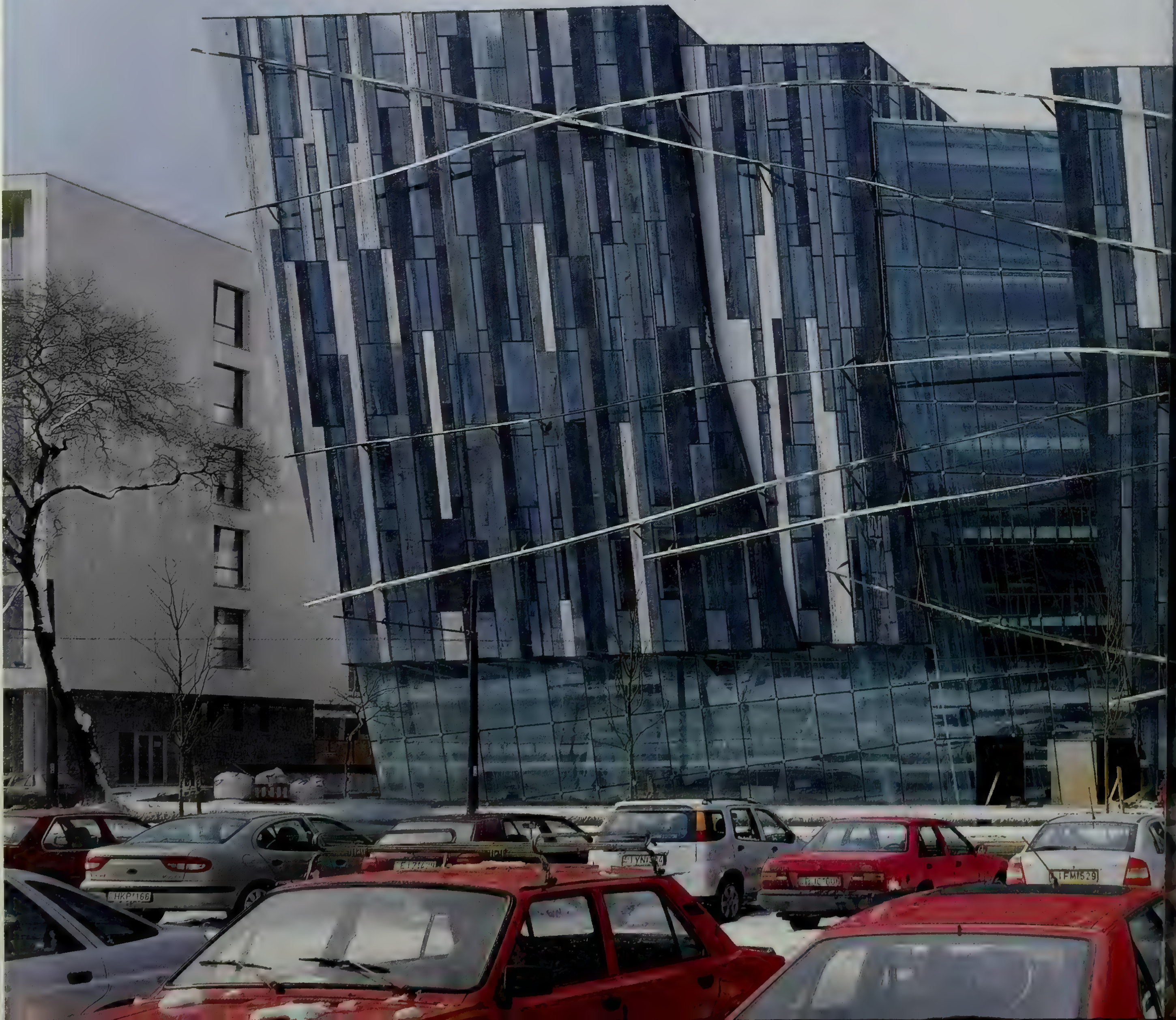
For more information on this project, go to Projects at **www.archrecord.com.**



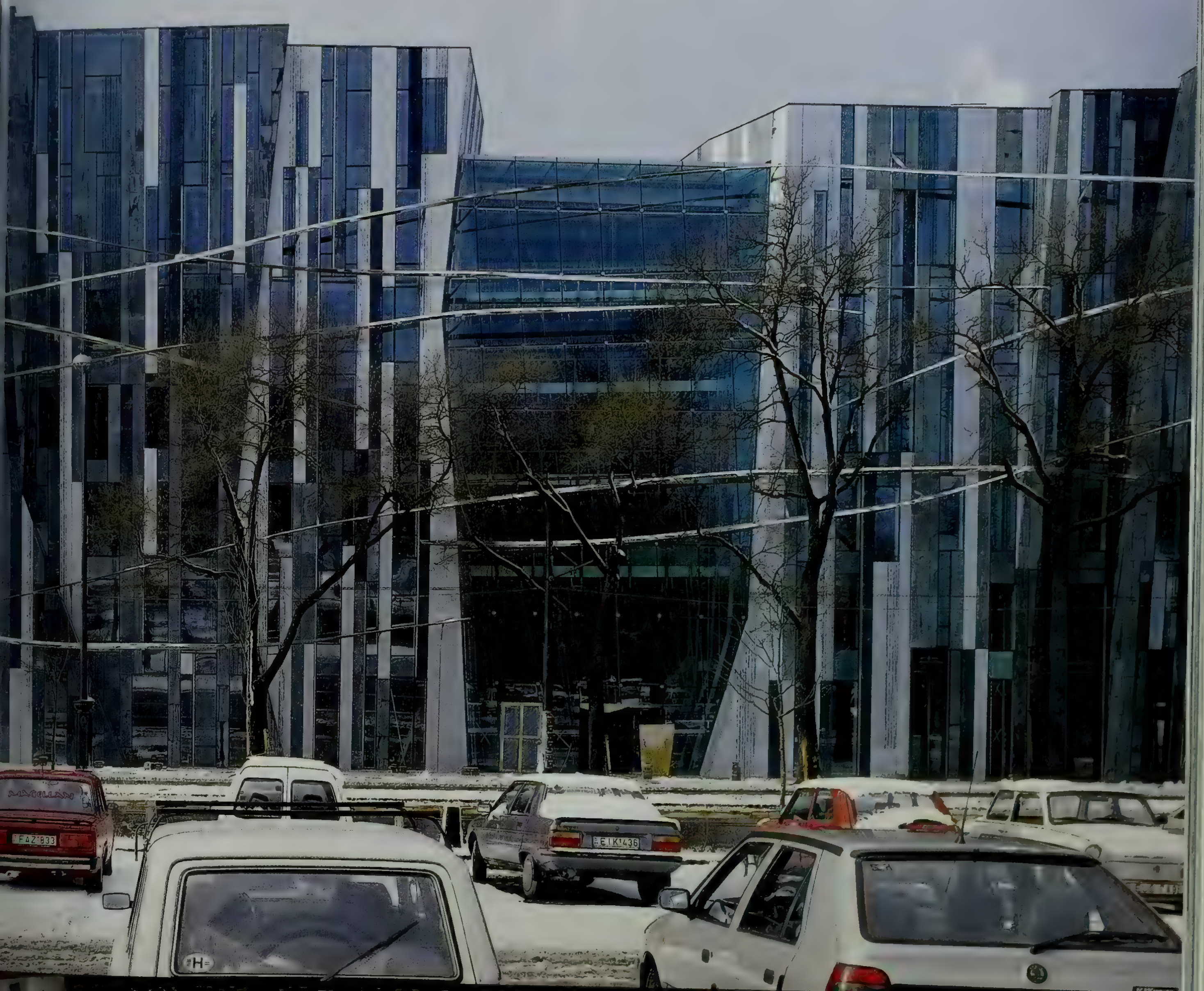
Stairs slung on bowed trusses dynamically cross the central "canyon," amid canted cable-net scrims (this page and opposite). Warm terrazzo floors resemble cork. As a consultant, April Greiman oversaw the colors and finishes.

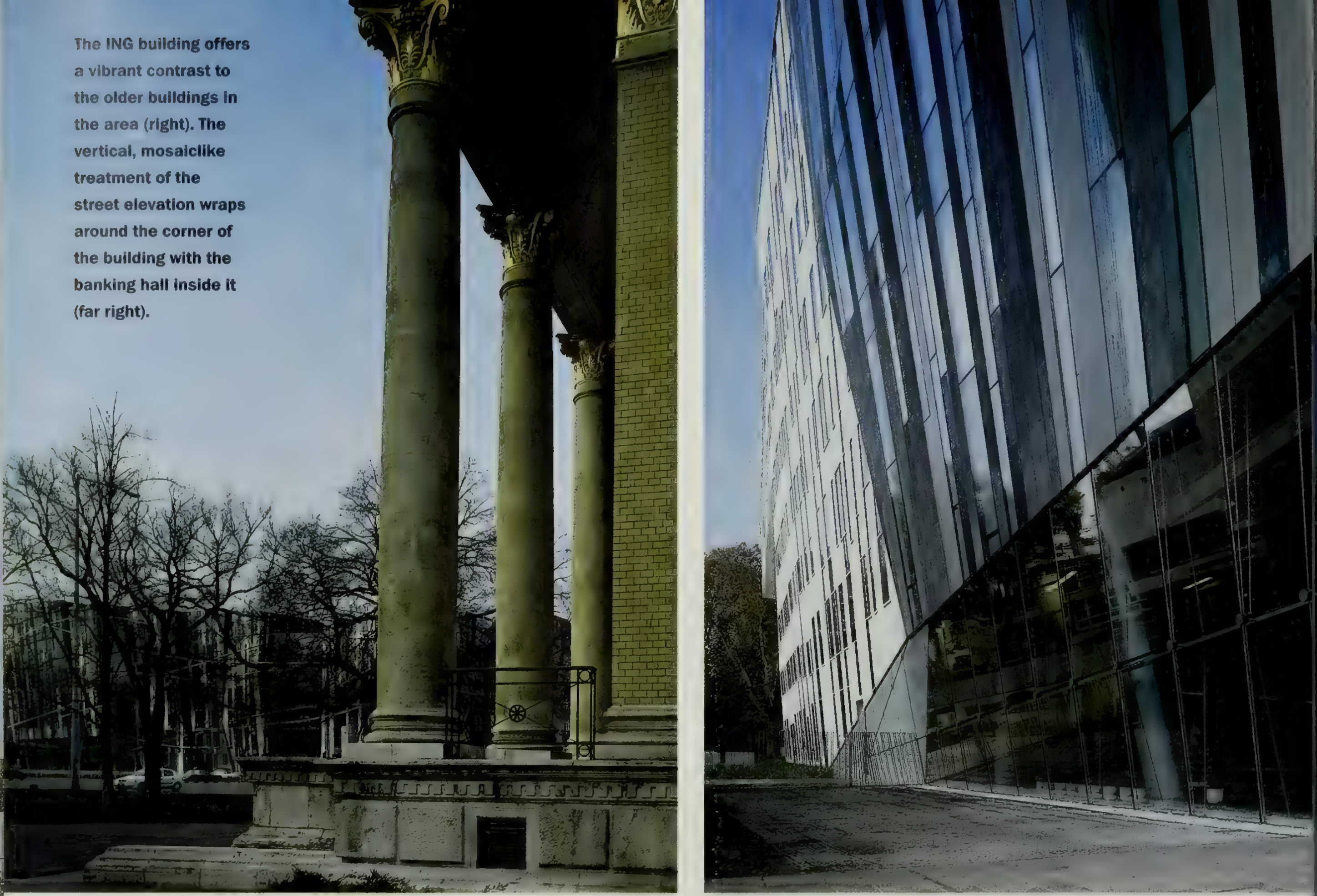
Set in a neighborhood that has a park and landmarks such as the municipal museum, the ING building maintains the scale and massing, though not the architectural expression, of nearby buildings. Van Egeraat negotiated the difference in height between a 19th-century villa on one side of ING and a Communist-era concrete structure on the other by designing a roof that steps up from west to east.





Erick van **Egeraat** provides a shot of architectural adrenaline to a staid streetscape with his **ING HEAD OFFICES** building in Budapest





The ING building offers a vibrant contrast to the older buildings in the area (right). The vertical, mosaiclike treatment of the street elevation wraps around the corner of the building with the banking hall inside it (far right).

By Tracy Metz

Hungarians talk about "the changes," a blanket term covering both the fall of the Iron Curtain in 1989 and the country's entry into the European Union in 2004, but admit little has changed in terms of Budapest's architecture. "Socialism still has a strong grip on our minds," said a young Hungarian late one night at one of the clandestine cafés that pop up unpredictably at changing locations in the city's many interior courtyards. "Our buildings are still mediocre." Dutch architect Erick van Egeraat, though, is shaking things up with projects such as the ING Head Offices on Dózsa György Street, commissioned by the real estate arm of ING, the large Dutch financial services company.

Van Egeraat, who had been a principal at the firm Mecanoo, now heads Erick van Egeraat Associated Architects (EEA), with offices in Rotterdam, London, Prague, Budapest, and Moscow, an arrangement that keeps him on the road 200 nights a year, he claims.

The ING project, a multitenant office building that addresses the street with a hyperkinetic facade, makes a striking addition to Budapest, with its tradition of solid, even stolid architecture. Located near landmarks such as the municipal museum, Városliget City Park, and the vast and empty Square of Heroes, the building sits around the corner from the increasingly cosmopolitan Andrassy Boulevard (home of Budapest's only Apple store). The building's expressive exterior has already become a symbol of a new era in the city's architecture. For the developer, the project turned out to be a very good deal: A day after taking possession, ING sold it to Deutsche Bank for a serious profit.

The 270,000-square-foot building, which sits above three levels of underground parking, accommodates public functions on the ground floor, such as a bank and a restaurant, with six floors of office space above (including EEA's Budapest branch), and a penthouse boardroom. It replaces two Stalinist-style office blocks from the 1950s and is bordered on one side by a Modernist box in the best Communist tradition (which EEA had renovated earlier), and on the other by a 19th-century villa: "It was my intention to bring cohesion to the street without copying the past," explains van Egeraat. The new building

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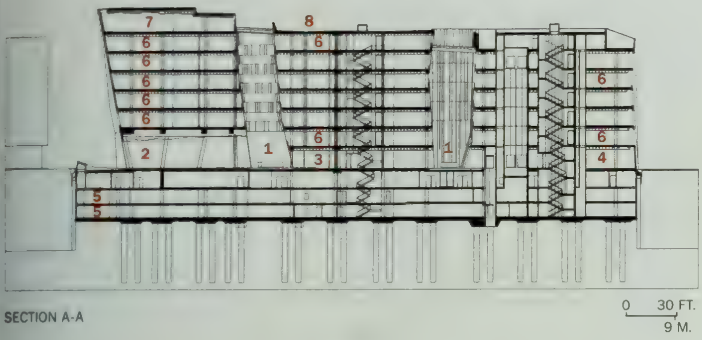
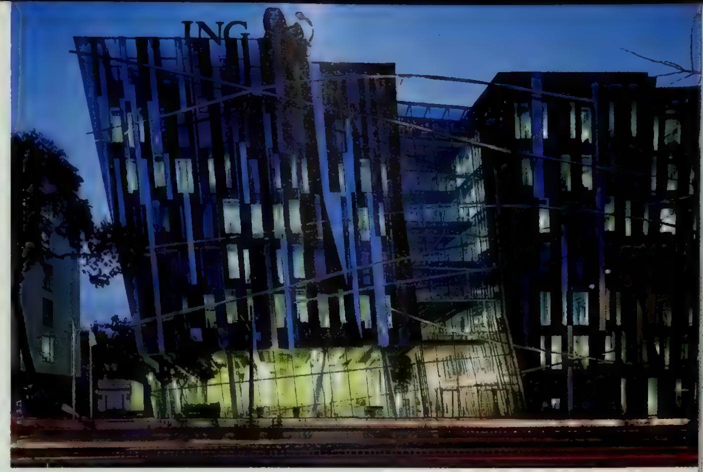
Project: *ING Head Offices, Budapest, Hungary*
Architect: *Erick van Egeraat Associated Architects—Erick van Egeraat, János Tiba, Judit Z. Halmágyi, Eszter Bódi, project architects; Zita Balajti, Zsófia Bálint, Balázs Beczner, Ágnes Benkö, Gabriella Grand, Zsófia Gutvill, Zoltán Gyüre, Sándor Kogan-Szabó, Darko Kovacev, Áron Láncos, Michael Rushe, project team*
Engineers: *MTM (structural); SMG-SISU (mechanical and electrical)*
General contractors: *Csarnok 2002*

Tracy Metz is RECORD*'s international correspondent in Amsterdam and writes for the Dutch newspaper* NRC Handelsbad.

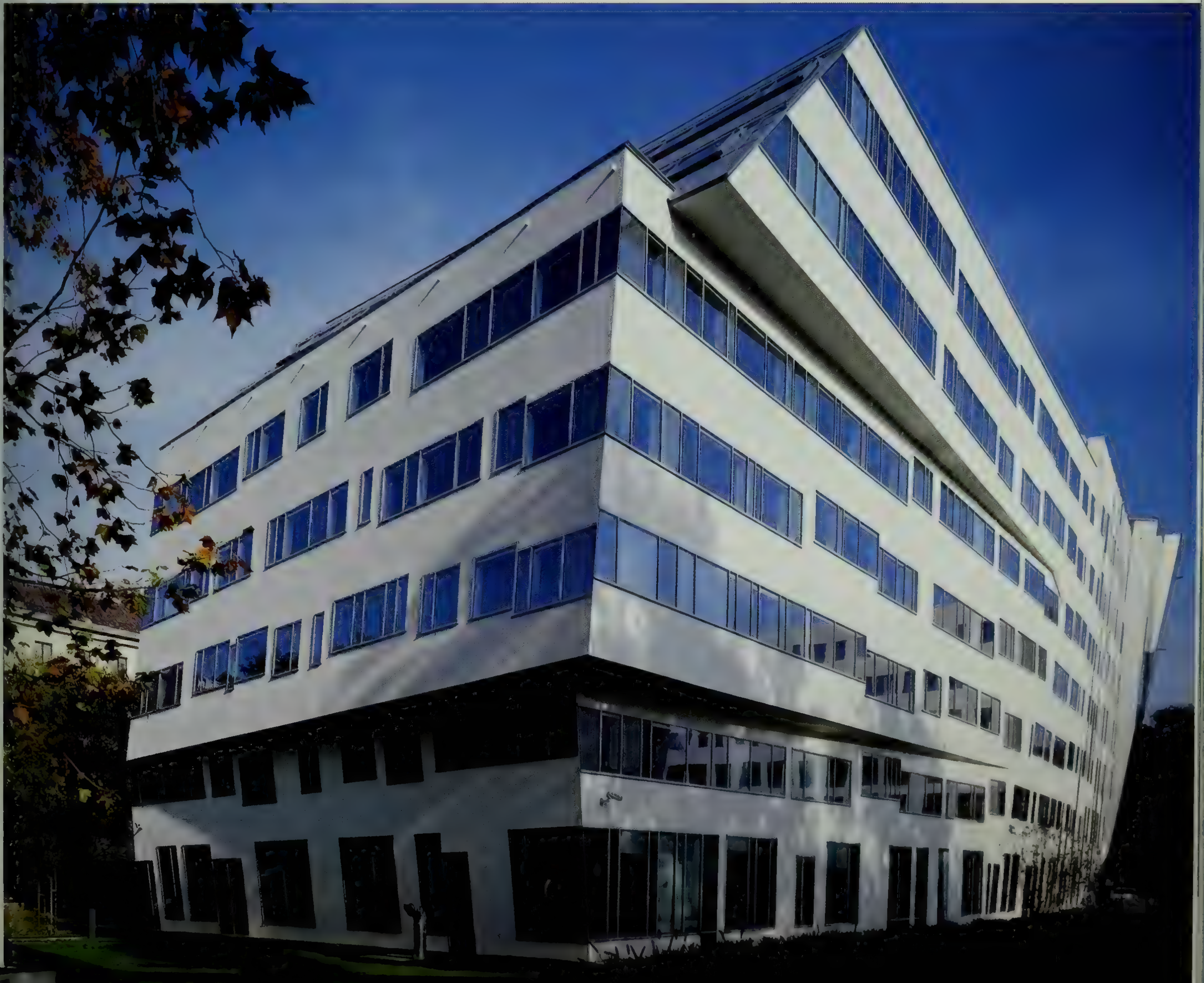


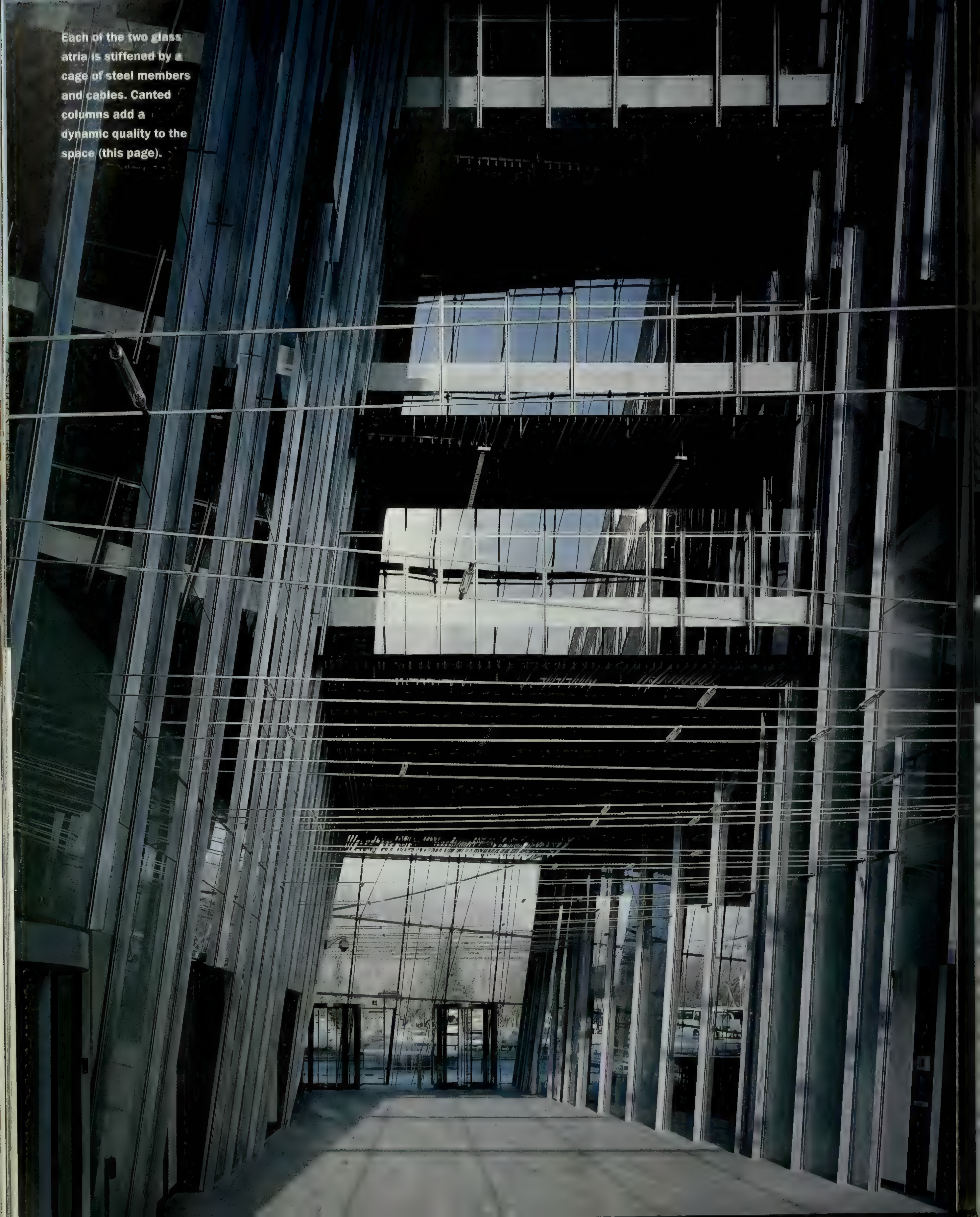
SECTION A-A

1. *Foyer*
2. *Banking hall*
3. *Meeting*
4. *Café*
5. *Parking*
6. *Offices*
7. *Boardroom*
8. *Roof terrace*

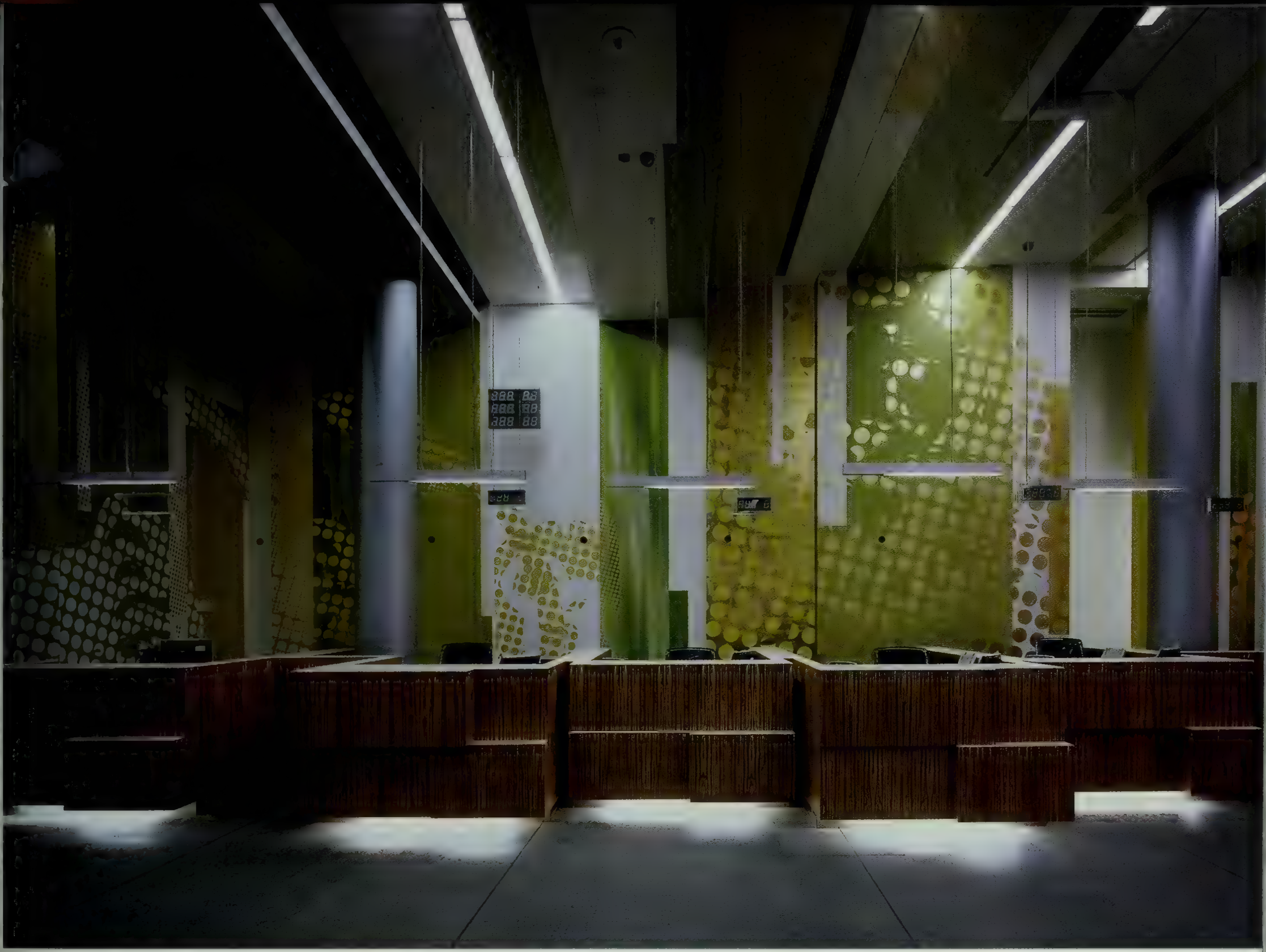


Van Egeraat broke the building into three volumes separated by a pair of glazed atria, then tied the composition together with looping, decorative metal ribbons (above). Fenestration on the sides and back is a sly reference to Dutch Modernism (below).





Each of the two glass atria is stiffened by a cage of steel members and cables. Canted columns add a dynamic quality to the space (this page).

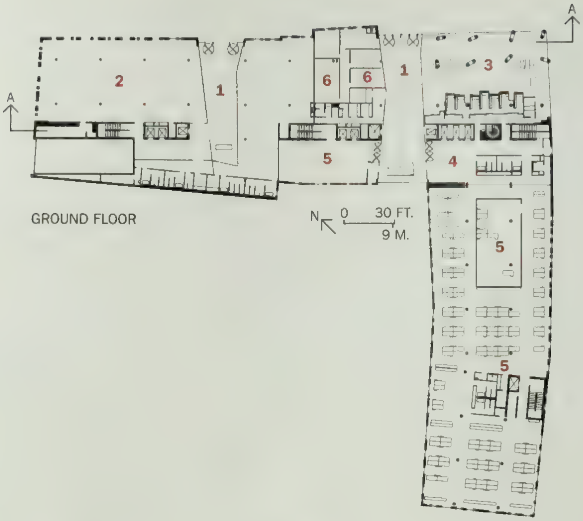


increases in height as it makes the transition from the older villa to the much larger Communist box. Across the entire length of the facade, van Egeraat floated shiny steel ribbons, vestiges of the flowing lines he drew in one of his very first sketches to indicate the continuity of time symbolized by these three buildings.

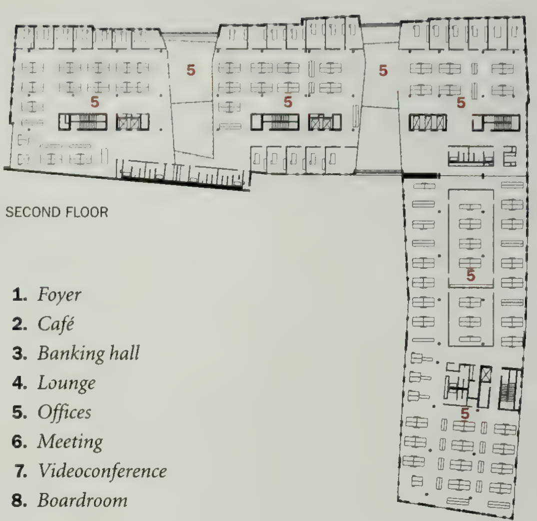
The architect broke the building into three separate volumes connected by a pair of glazed, asymmetrical atria that seem to sway in between. He clad all three volumes in irregular vertical strips of aluminum, glass, and stone, which were hand-mounted on the poured-in-place concrete structure. To this mosaic of verticals, he added silk-screened stripes that look rough and hand-painted, providing a craftsmanlike and tactile element to the skin of the various folds and creases. In his first project in Budapest, a rehabilitation and extension of a landmarked building for ING on Andrassy Boulevard, van Egeraat silk-screened the glass addition with a pattern bearing a remarkable resemblance to stone. That building is now empty, and the architect hopes it can be used as a fashion center, including a department store and restaurant.

The street facade of the new building seems to ripple, with parts

The banking hall offers a vibrant space with decorative wall painting, counters clad with zebrano-wood veneer, and Italian granite floors (above). The boardroom (right) enjoys views at the top.

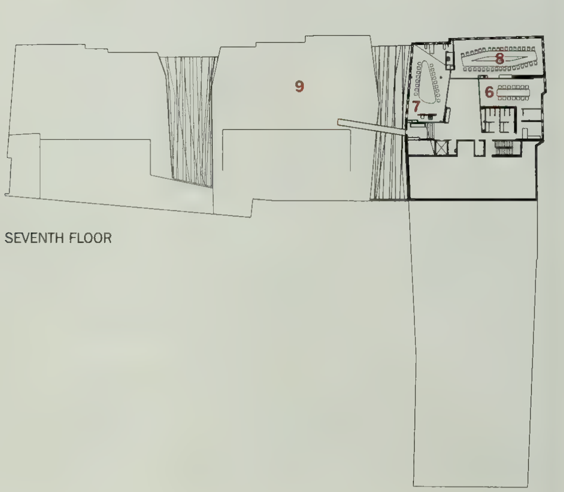


GROUND FLOOR



SECOND FLOOR

1. *Foyer*
2. *Café*
3. *Banking hall*
4. *Lounge*
5. *Offices*
6. *Meeting*
7. *Videoconference*
8. *Boardroom*
9. *Roof terrace*



SEVENTH FLOOR

ING offers 270,000 square feet of space on seven floors with plans that provide plenty of daylight in offices and spaces such as the banking hall (left).

sloping forward at a delicate angle and others leaning back like the ribs of a half-open fan. Then they fold inside to form the ceilings of the offices, atria, and bank lobby on the ground floor. Inside the atria, van Egeraat stiffened the glass curtain walls with a cage of steel cables stabilized by long steel planks. On the outside, he tied together the entire elevation with looping metal ribbons that are purely decorative. Lamps in the sidewalk uplight the facade, heightening the building's dramatic impact on the cityscape.

A jagged roofline—the result of the height differences of the building's three volumes—emphasizes the design's dynamic character. And by making it impossible to read the individual floors behind the mosaic facade, van Egeraat emphasizes the sculptural aspect of the project.

Van Egeraat calls his design principle "composed randomness," and applied it particularly to the building's fenestration. "Even in this age of computer-aided design, the windows were very complex to design," he says. "I used a set number of window types, of course, but I wanted the building to look as if they were all different. Moreover, when you look up from the street, some windows seem to tower over you, and others are foreshortened because they lean back." In the boardroom at the top of the tallest of the three volumes, some of the windows extend all the way up to and over the roof, emphasizing the "randomness" of their placement.

The building calms down on the back and sides, where the architect created fluid, boatlike forms using white plaster surfaces, and horizontal fenestration that evokes the strip windows of Modernism, the style van Egeraat loves to hate.

Inside, though, the off-balance aesthetic starts up again. For example, van Egeraat finished the walls of the bank lobby with green and gold graphics, clad blocky counters with wooden slats, and tilted silver columns at odd angles. "I felt freer here," he says, "since this is a public space and will probably change more often than the offices."

Van Egeraat describes his architecture as "Modern Baroque," an intentional riposte to the fatigued brand of Modernism that dominated the Netherlands both as an ideology and as a style for most of the 20th century. "My architecture has to do with emotion and intuition," he states, "not with the anemic less-is-more reductionism that has made architecture into a dogma rather than an art. My task is to make beautiful things. How they are made is not important, what matters is how they look." ∎

Sources

Glass and aluminum facade: *Alukol*

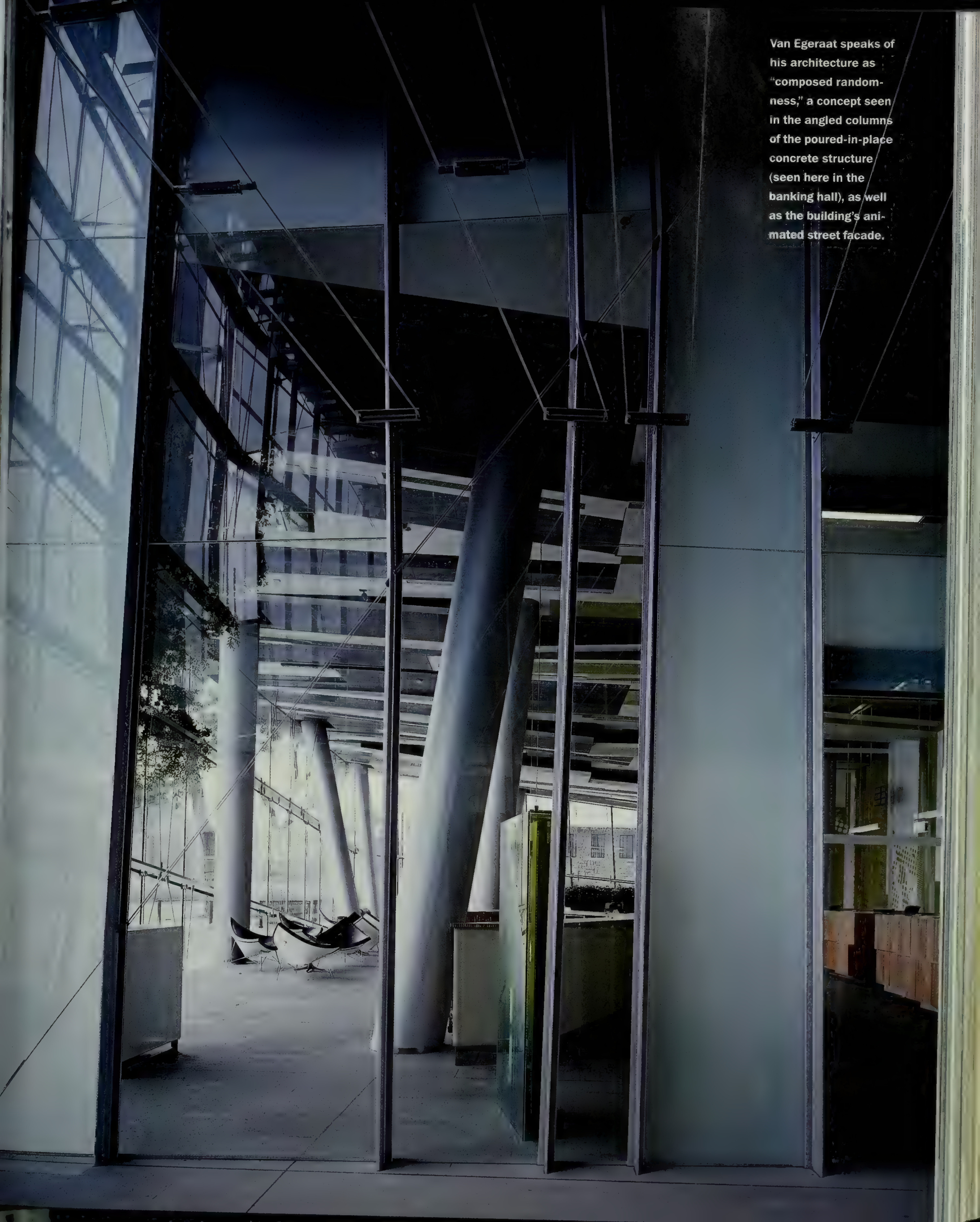
Atrium glass wall and roof: *Helmut Fisher, with RFR*

Internal glass facade: *Havasi*

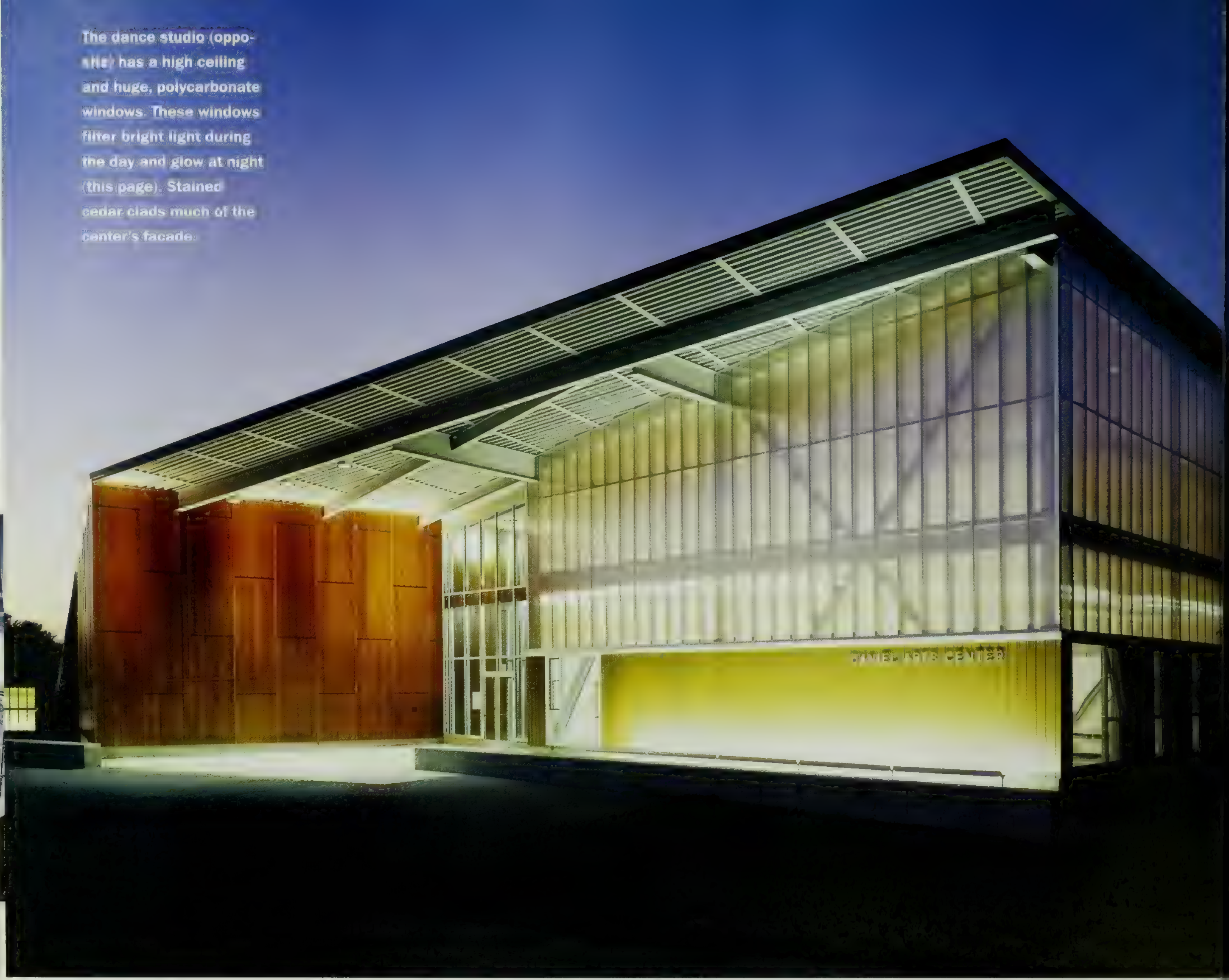
Stainless-steel facade ribbons: *Határ-T Plusz, with System Steel*

Granite floors: *Reneszánsz*

For more information on this project, go to Projects at **www.archrecord.com.**



Van Egeraat speaks of his architecture as "composed randomness," a concept seen in the angled columns of the poured-in-place concrete structure (seen here in the banking hall), as well as the building's animated street facade.



The dance studio (opposite) has a high ceiling and huge, polycarbonate windows. These windows filter bright light during the day and glow at night (this page). Stained cedar clads much of the center's facade.

By Sam Lubell

Founded as a 1960s experiment for motivated and restless high school juniors and seniors to advance directly to college, Simon's Rock College of Bard began with a tiny student body on a campus nestled in the Berkshire Mountains. In recent years, the school, hoping to expand its offerings, has enlarged its student numbers by about a third, and has begun augmenting its facilities to match, building a new athletic center, science center [RECORD, February 2000, page 88], dormitory, and upcoming student union. But while doing this, explains longtime dean (and now English department chair) Bernie Rodgers, the school didn't want to lose the quirky, alternative character that made it special in the first place.

Therefore, in designing the school's Daniel Arts Center, Boston-based Ann Beha architects had a lot to negotiate. It wanted to retain the uniqueness of the college and respect the surroundings of verdant forests, timber frame buildings, converted barns and sheds, and Modern construction. At the same time, it sought a contemporary set of buildings that would be a symbol of the school's progress and a literal public face at the campus's edge. All within a modest $12.5 million budget.

The 53,000-square-foot complex, which triples the school's total arts space, is located on a fairly steep incline on the roughly 5-acre site of an abandoned orchard near the campus entrance. It replaces a quaint but outmoded cluster of off-campus dairy barns used for the arts. In order to respect the campus's scale, maintain intimacy, and make the center's elements more legible, the architects broke the complex into three parts: one

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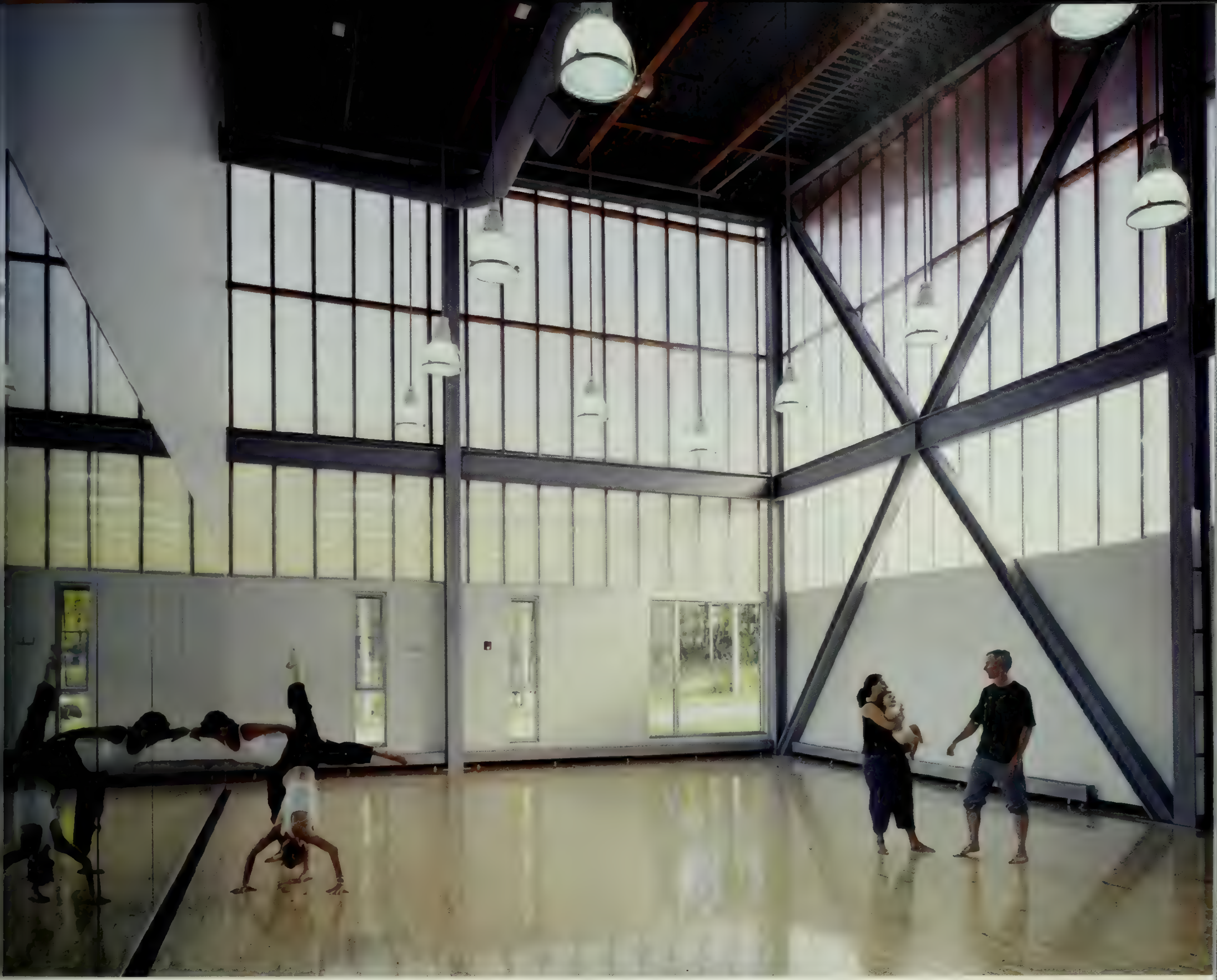
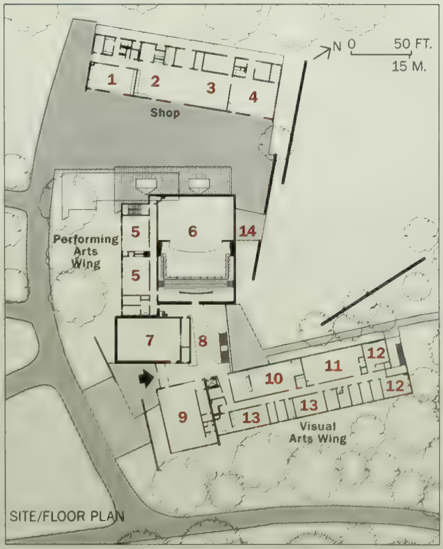
Project: *Daniel Arts Center, Great Barrington, Massachusetts*
Owner: *Simon's Rock College of Bard*
Architect: *Ann Beha Architects—Ann Beha, FAIA, Robert Miklos, FAIA, principals; Geoffrey Pingree, AIA, project manager; Zachary Hinchliffe, AIA, project architect; Tom Kahmann, AIA, Patrick Tam, Mark Oldham, project team*
Engineers: *LeMessurier Consultants (structural); TMP Engineers (m/e/p, f/p); White Engineers (civil)*
Consultants: *Reed Hilderbrand (landscape); Acentech (acoustical); Fischer Dachs Associates (theater); Ripman Lighting Consultants (lighting)*
General contractor: *Mullaney Corp.*



PROJECTS

Ann Beha Architects creates a dynamic campus symbol while respecting tradition and creativity at the **DANIEL ARTS CENTER** of Simon's Rock College of Bard

The cavernous shop, clad in cementitious board (top) resembles a big-city arts loft. Large windows make visual arts rooms feel less cramped (opposite). The main-stage theater opens up (bottom) to accommodate open-air performance.



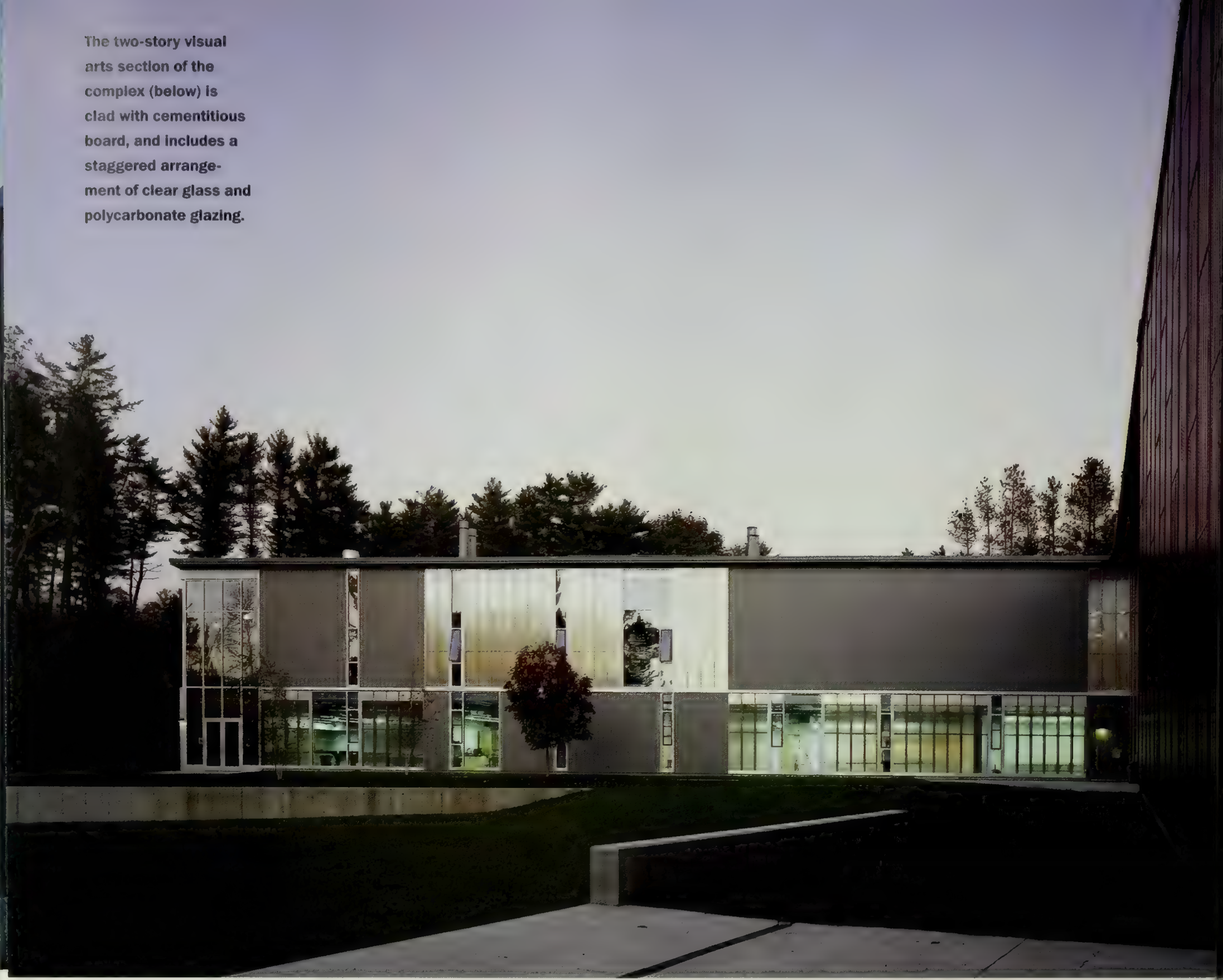
1. *3D Studio*
2. *Wood shop*
3. *Metal shop*
4. *Ceramics studio*
5. *Rehearsal space*
6. *Main-stage theater*
7. *Studio theater*
8. *Upper lobby*
9. *Dance studio*
10. *Electronic arts studio*
11. *Painting studio*
12. *Classroom*
13. *Arts lab*
14. *Outdoor stage*

for performing arts, one for visual arts, and a shop, which sits slightly apart from the others. The buildings are oriented to face the rest of campus and to maximize exposure to natural light.

The performing arts center, the facility's largest component, includes a 350-seat main-stage theater; a 100-seat studio theater; a dance studio; and several rehearsal, support, and office spaces. The roof's gradual pitch accommodates and minimizes the tall heights of the theater and dance studios. Stained cedar planking, applied vertically and highlighted at intersections with aluminum flashing, clads the outside of the main-stage and studio theaters, accenting them and adding a striking overall richness. Grayish cementitious board, installed with a vertical ship-lapped profile, clads the rest of the building, including the "back of house" theater spaces. Semitransparent polycarbonate glazing, wrapping around wood studs, elegantly filters light in and out of the building, reducing glare and heat, and glowing in a mesmerizing fashion at night. In the two-story lobby, exposed, large-span steel trusses, fir beams, and mechanical systems help maintain lofty heights and reveal the building's steel frame structure. This space is also lined partly with cedar, while clear glass curtain walls at its two entrances supply more natural light.

The theaters are sophisticated and technically advanced, ideal for students who often felt limited by their high school facilities. The main-stage theater includes a full fly space, spaces for several sets, and computer-controlled sound and lighting. Walls are partially clad with staggered, stained plywood, a simple solution that produces a dynamic effect. The architects attended theater classes in order to better understand students' needs, resulting in unique touches. The theater opens through a large sliding door at stage left to accommodate outdoor performances; the studio theater includes a walkable grid above the stage so students can learn technical skills without having to perch on a catwalk. The high-ceilinged dance studio, surrounded almost completely with polycarbonate glazing and opening to the lobby, receives perhaps the most natural light of any space in the complex.

The sleek visual arts center, clad in a vertical pattern of cementitious board, clear windows, and polycarbonate glazing, is connected, and perpendicular to, the performing arts component. The space has double-loaded corridors that accommodate an impressive selection of arts facilities, including a darkroom; printmaking, drawing, and painting studios; and audiovisual and electronic-music labs. The cavernous, cementitious-board-clad shop building, which has large garage doors, a


The two-story visual arts section of the complex (below) is clad with cementitious board, and includes a staggered arrangement of clear glass and polycarbonate glazing.

loading zone, and its own outdoor work yard, has a more industrial feel that Beha compares to an enormous body shop garage. Isolated from the rest of the complex, it contains facilities for wood working, metal working, jewelry making, and ceramics. As with most artists' lofts, its extreme openness provides room for variation and spatial relocation. "It's sort of a stage set for the arts," says Beha.

The complex effectively evokes both Modern and vernacular design. The main section's cedar cladding and sloped roofs lend it a contemporary sophistication, but still evoke the pastoral forms and even the cedar aroma of New England barns. Each building component establishes its own identity, but the three are unified by their proximity, and their simplicity—perhaps the complex's strongest features. Although it offers plentiful resources, it never feels overwhelming or discombobulating. Some smaller classrooms can feel a little cramped, but the prevalence of interior light and spatial order minimize this sensation. Still, outside, the landscape feels a little bare, partly due to a construction miscommunication that resulted in the removal of several trees from the former on-site orchard.

While the rich cedar cladding is a highlight, the cementitious board, necessitated by budget, is more pedestrian, despite frequent window piercings and the vertical board-and-batten arrangement. The material matches best with the industrial shop, and still fits well into the low-key campus, where similar materials are prevalent.

But inside, such concerns are forgotten, as visitors move along an extremely welcoming progression of spaces. While the building has a familiar feel, it is also, like the school's original mission, quirky and unique. The combination of varied spaces and materials, even the art lining the walls and standing in the lobby, contributes to this impression. Meanwhile, a long boardwalk connects the center to the rest of campus. Students use it for long conversations, to balance themselves on its side rails, and ride downhill on skateboards. Indeed, Simon's Rock's creative spirit is alive and well here. ■

Sources

Glass: *PPG; Polygal Cellular Polycarbonate*

Siding: *Hardiplank*

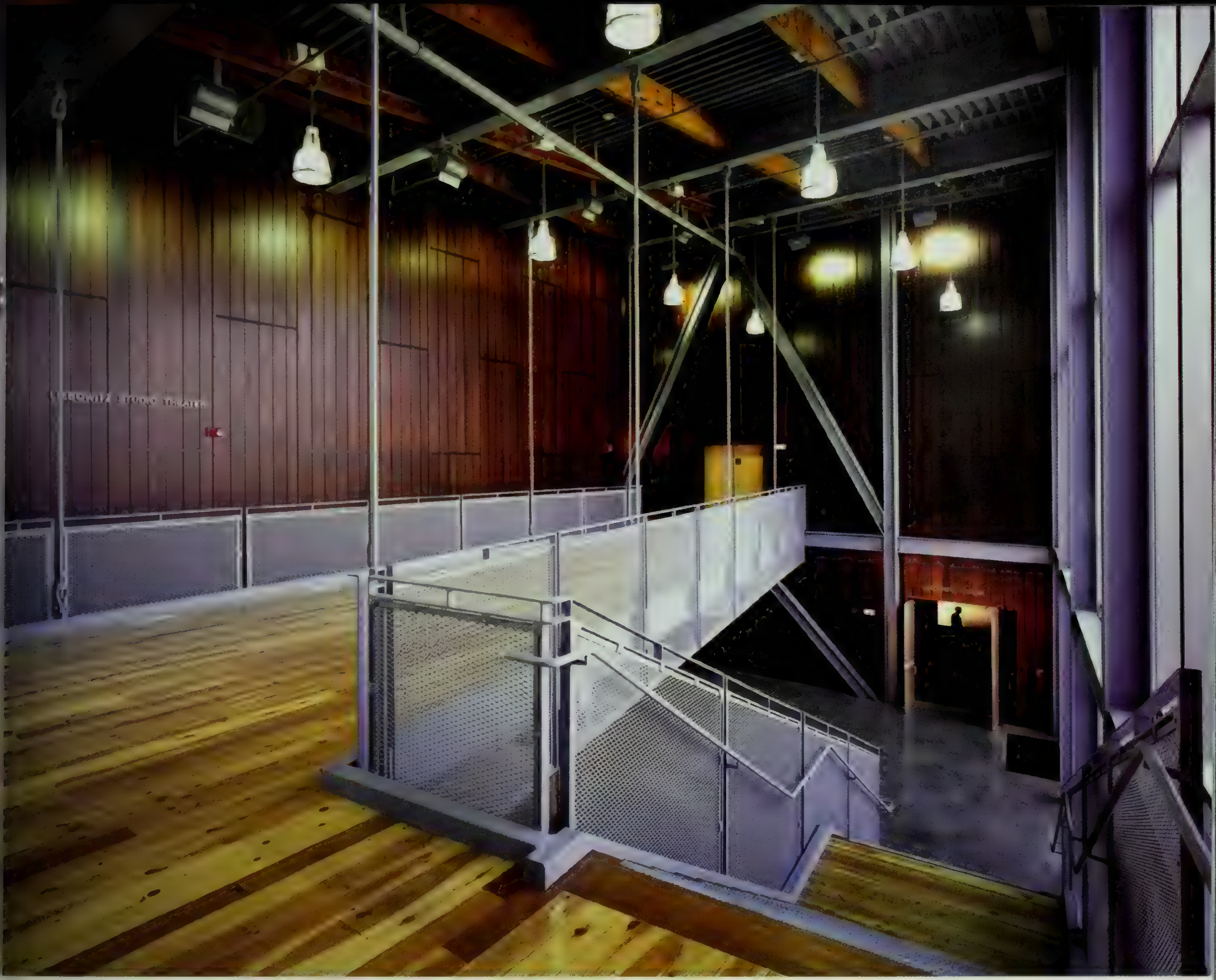
Paint: *Sikkens stain*

Metals: *ICI Devoe Coatings*

Drywall: *USG*

Lighting: *Hess America; Lithonia; Lightolier; Cole; Holophane; Kurt Versen*

For more information on this project, go to Projects at **www.archrecord.com**.



The exposed steel-and-fir beams and mechanical systems of the lobby help open up the space (top). Its cedar cladding lends both a sophisticated and rustic look. The main-stage theater (left) is lined with polished plywood panels. The studio theater (right) features a steel walkway above, used as a teaching space.

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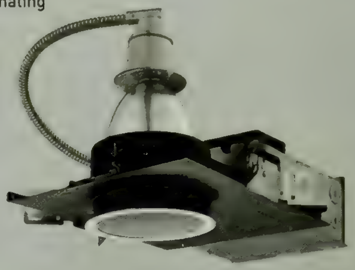

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ADAPTIVE REUSE

Extreme Makeovers

NOT EVERY PRESERVATION AND RENOVATION PROJECT NEED BE DONE WITH SUBTLETY; SOMETIMES A MORE RADICAL APPROACH IS NEEDED—BUT IT ALL DEPENDS ON THE ORIGINAL BUILDING.

By Suzanne Stephens

1.

Downey, California

Frank R. Webb Architects took an old aeronautics building in an industrial wasteland near Los Angeles and made it habitable and visually palatable.

2.

Mill Run, Pennsylvania

Bohlin Cywinski Jackson knew when to leave well enough alone in converting two old barns into offices and an event space near Fallingwater.

3.

Long Island City, New York

Daniel Goldner Architects transformed a dilapidated brick structure into a training facility for ornamental and architectural ironworkers.

4.

Tokyo, Japan

Kengo Kuma & Associates created an evocative museum for a Japanese abstract artist using remnants from his former house and atelier.

Long before *Extreme Makeover: Home Edition* became the rage among television viewers, the topic had been covered in print, particularly in the dramatic "before" and "after" remodeling issues of *Architectural Digest*. Once a year, since February 1992, the magazine has presented a riveting assortment of houses and apartments turned from dreary, bare-bones residences into ultra-luxurious settings.

In the world of larger, commercial buildings—and tight budgets—the same dramatic metamorphoses occur. We don't mean the painstaking restorations of treasured theaters or churches, or even the careful updating of old buildings for new uses. We are talking about the renovation where a deeply problematic piece of nonarchitecture is transformed into a designed artifact that is truly uplifting—one that not only affects the immediate surroundings, but sends a message that architecture still has the power to enhance the built environment.

In this issue, we present four "extreme makeovers" of varying types. Two—Independence Park, an office complex for Kaiser Permanente in Downey, California (near Los Angeles), by Frank R. Webb Architects; and Ironworkers Local 580: Apprentice and Training Facility in Long Island City, New York, by Daniel Goldner Architects—represent drastic conversions of visual dross into exemplary modern design. Both renovations, which transfigure the buildings' interior and urban environments, are located in light-industrial areas where architecture with a capital *A* is rarely seen.

A third makeover demonstrates that a renovation can be radical and at the same time leave the best alone. In renovating The Barn at Fallingwater, in Mill Run, Pennsylvania, Bohlin Cywinski Jackson discovered that the main barn interior, with its open slats letting in air and daylight, was too compelling a space to change. So it didn't. The firm convinced the client to change the program. This space is now rented out for weddings, receptions, and conferences during the warmer months of the year. And it still stands in all its pristine beauty. With the remainder of the complex, the architects sensitively used natural materials, including straw-bale panels, to underscore the structure's vernacular beauty.

A fourth example in this roundup is so extreme, it is in a category by itself. The Masanari Murai Art Museum, in Tokyo, dedicated to the work of the eponymous abstract artist, was designed by Kengo Kuma & Associates to preserve the traces of Murai's house and workshop. In this case, the original had deteriorated so much that little could be salvaged, except the atelier and parts of the wood structure. Kuma did so with a clarity and inventiveness that illustrates that even in the most extreme makeover, the spirit of the place can be saved. ■

For more information on these projects, go to Building Types Study at **www.archrecord.com.**

Independence Park
Downey, California

1

FRANK R. WEBB ARCHITECTS HAS TRANSFORMED A DREARY AERONAUTICS BUILDING NEAR LOS ANGELES INTO OFFICES FOR A HEALTH-CARE PROVIDER.

By Joseph Giovannini

Architect: *Frank R. Webb Architects—Frank R. Webb, AIA, principal; Ken Stein, AIA, senior project designer; Robert C. Gross, AIA, project architect; Pamela Domingo, project manager; Greg Coles, AIA, Shikha Chandrasena, Sagar Chavan, Alex Garcia, Patrick Daniels, Danielle Yafuso, Yllania Francis, Keith Fine, Steve Henrich, Glann Waggner, Betty Serafin, project team*

Client: *Kaiser Foundation Health Plan*

Engineers: *Brandow & Johnston Associates (structural); Westco Service (mechanical and plumbing); DPB Engineers (electrical); Paller-Roberts Engineering (civil)*

Construction management: *Intelisyn*

Consultants: *ah'bé Landscape Architects*

Size: *160,000 square feet*

Cost: *$16,000,000*

Completion date: *2004*

Sources

Masonry: *Orco Block*

Metal curtain wall: *U.S. Aluminum*

Glazing: *Trident*

Insulated plastic glazing: *Polygal*

Standing-seam roofing: *Marin*

For more information on this project, go to Building Types Study at **www.archrecord.com**.

The desolate mammoth that the nonprofit health-care-delivery provider Kaiser Permanente found in an industrial wasteland of expired aeronautics factories in Downey, California, was so off-putting that the employees, based in Pasadena, at first refused even to consider the move. Abandoned for five years, the building was a cold, characterless, 160,000-square-foot concrete bunker designed circa 1970 by engineers for Rockwell, an aerospace company whose demands for secrecy precluded windows and skylights.

Program

Kaiser Permanente called on the Los Angeles firm of Frank R. Webb Architects to transform architectural dross into a humane office environment fit for 24/7 occupation. At less than $100 per square foot, the budget was restrictive and demanded conventional building materials and considerable ingenuity.

Solution

Principal Frank Webb, AIA, and project designer Ken Stein, AIA, looked inside the ungenerous box for an architectural point of departure. Above the suspended ceiling on the first floor they found it in the form of coffered concrete ceilings, supported by columns with formerly concealed monumental conical capitals worthy of Karnak. Although the second floor did not have the same architectural heft—there the structure changed to thin steel columns supporting tapered steel girders—they decided to expose the heroic concrete structure, with loftlike interiors open to the ceilings.

Joseph Giovannini, a critic, has a New York-based design practice.

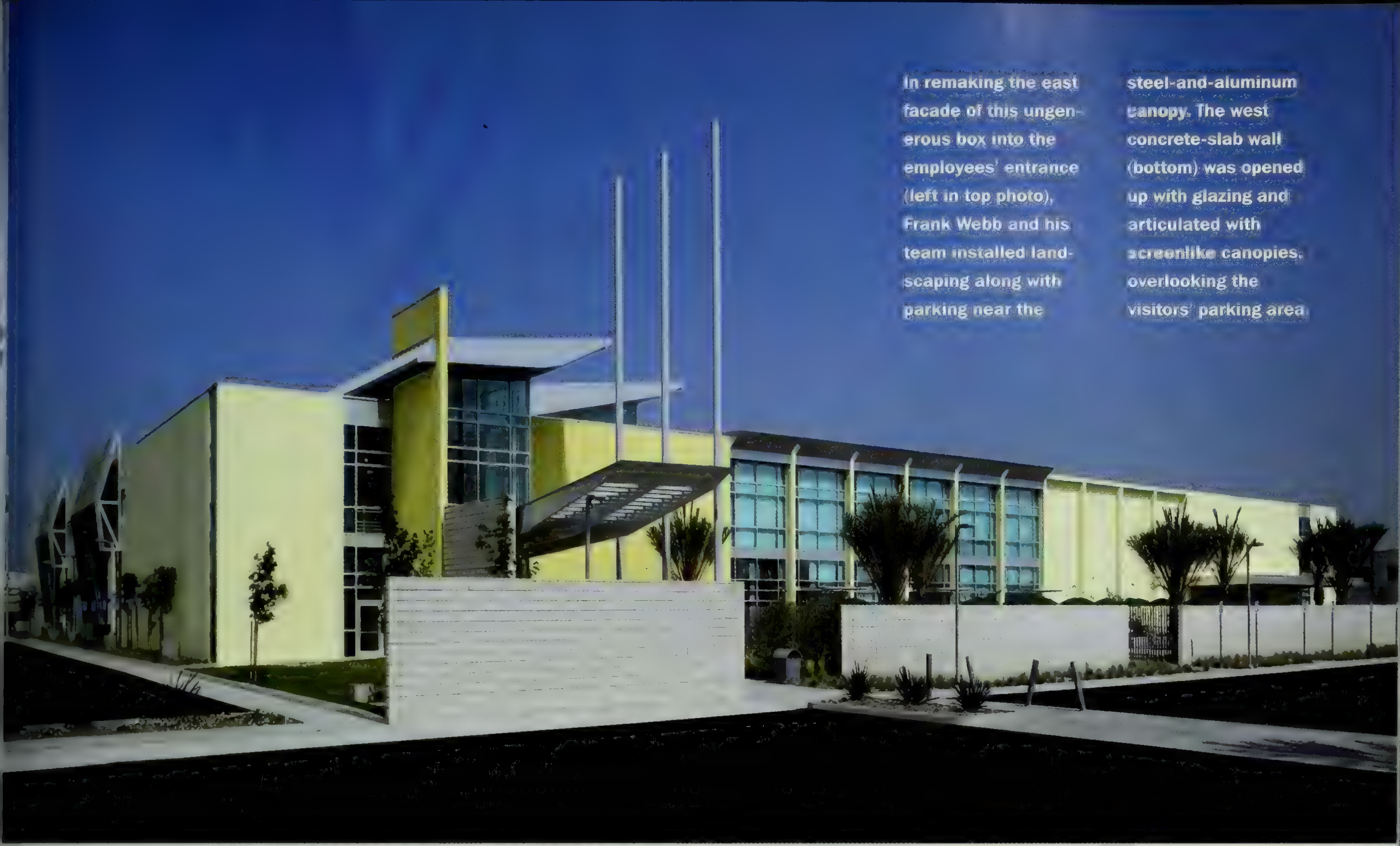
The east elevation of the aeronautic structure (top) and the west elevation (above) looked hopeless.

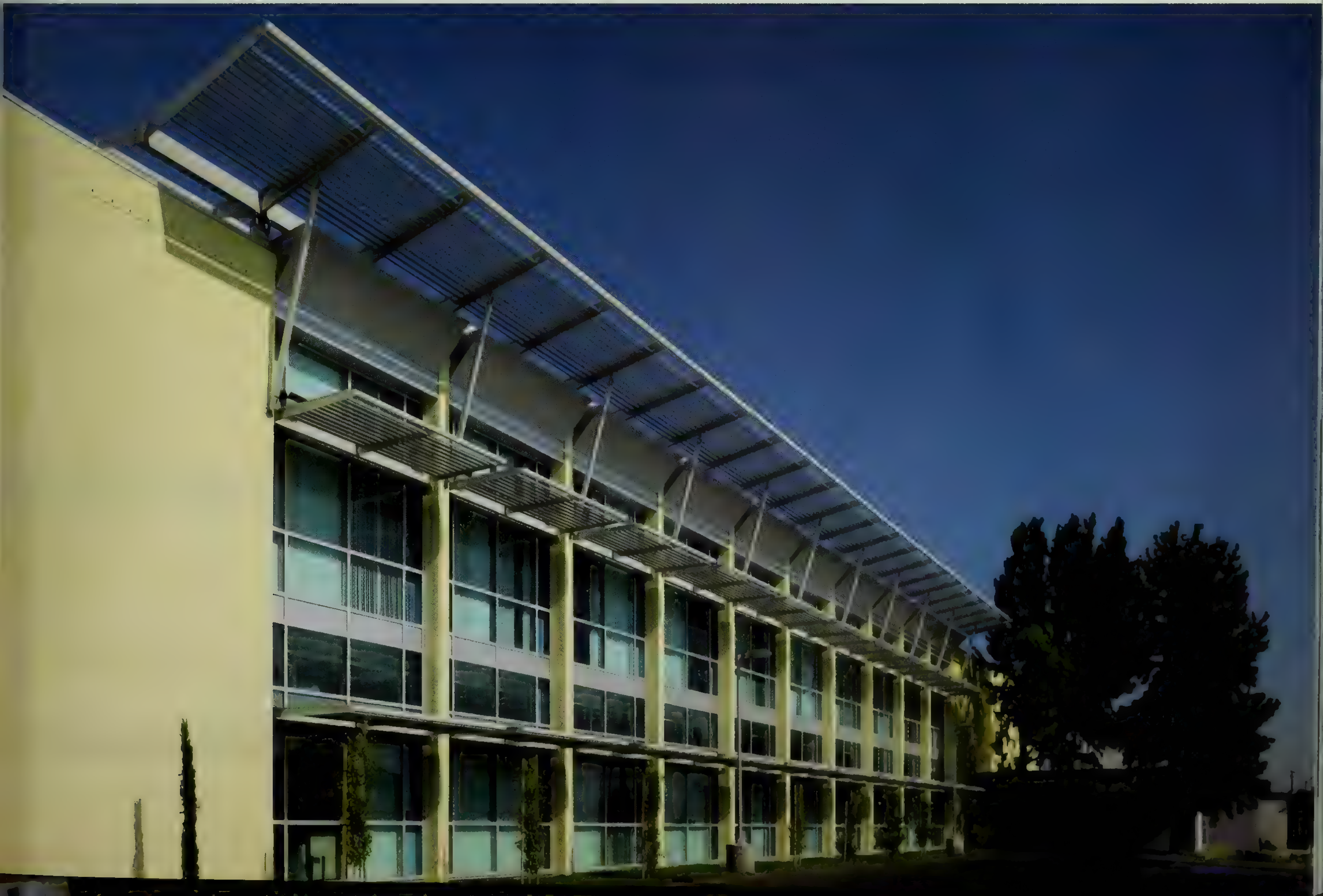
If the architectural idea came from within the building, the parti grew out of the paved path leading from the parking area to a new entrance, heralded by an airfoil canopy erupting out from the east facade. The path continues inside along a south axis leading straight through the building to the front guest entrance on the west side, housed in a handsome pavilion that was the only architectural artifact worth saving from the original building. The architects enhanced its de Stijl–style composition by adding more planes and an airfoil canopy.

The pedestrian street between the two entrances sets off an asymmetry that alleviates the rote symmetries of the original shell, which the architects sustain in the fortress of the right angle by slashing a diagonal path across the floor, much like Broadway plowing through the New York City grid.

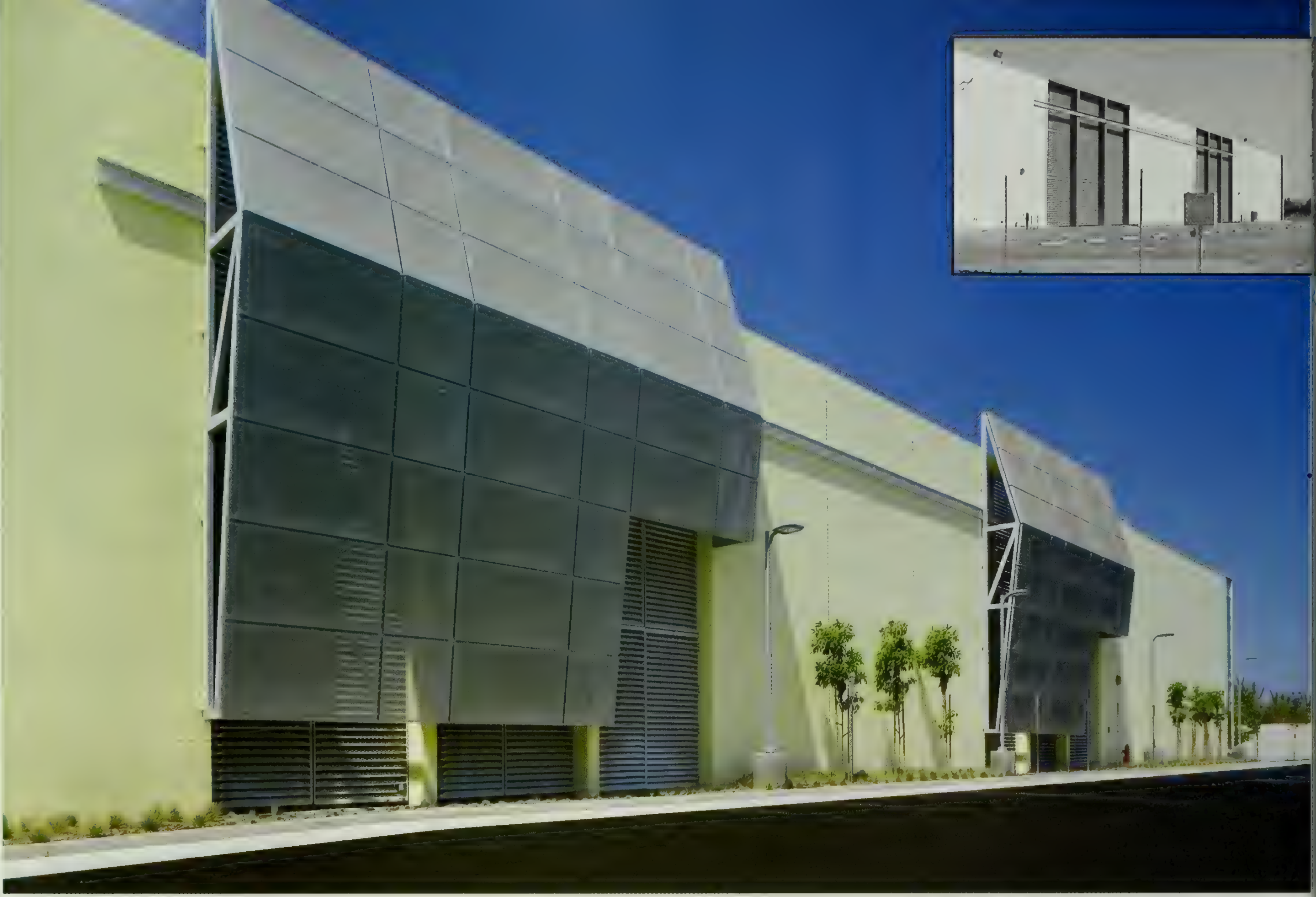
They also burst through the box vertically: At the employees' entrance, the architects carved a two-story interior courtyard that rises through the height of the building, breaking through the original roofline so that natural light floods the space via new clerestory windows. In this atrium, employees are brought together by the elevators, a monumental staircase that angles through the middle of the space, and an adjacent cafeteria.

By revealing the columns and coffered ceiling, Webb and his team used the existing tectonics to organ-

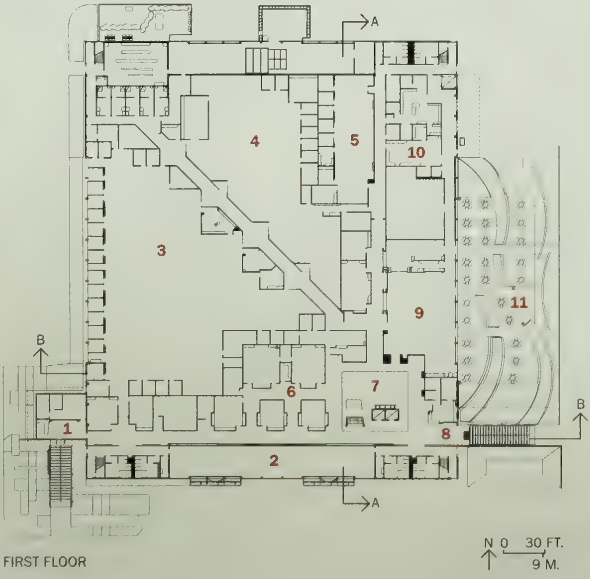




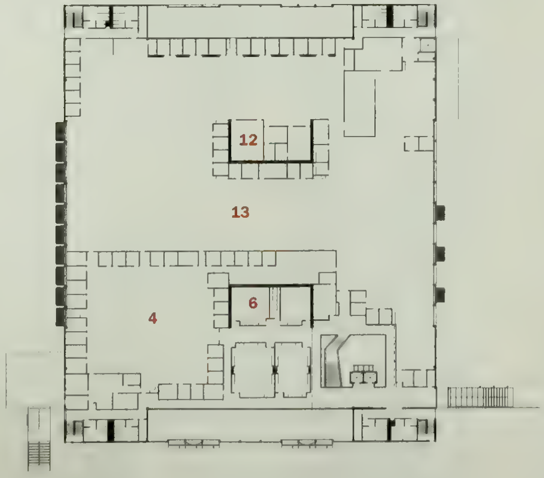
In remaking the east facade of this ungenerous box into the employees' entrance (left in top photo), Frank Webb and his team installed landscaping along with parking near the steel-and-aluminum canopy. The west concrete-slab wall (bottom) was opened up with glazing and articulated with screenlike canopies, overlooking the visitors' parking area.



The south side of the building, once concrete with louvers (inset), is now given a sculptural depth with steel panels over a steel frame. Behind it is an open-air mechanical yard that parallels a long east-wes pedestrian street inside.

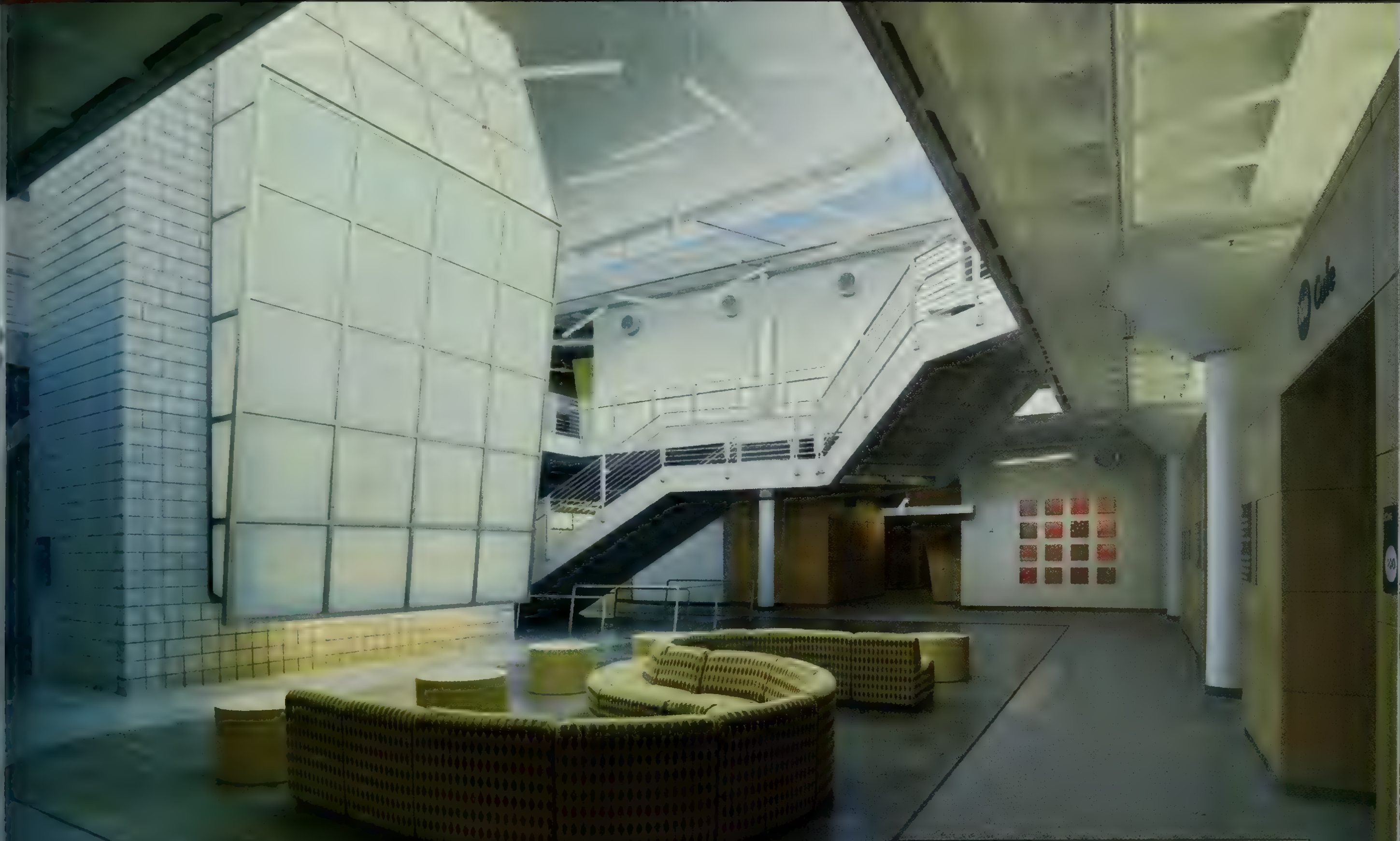


FIRST FLOOR



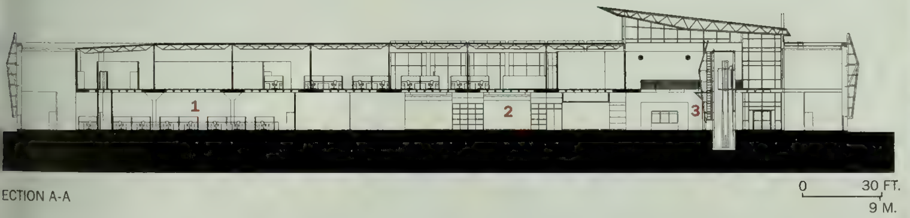
SECOND FLOOR

1. *Visitors' entrance*
2. *Mechanical yard*
3. *Case coordination center*
4. *Pharmacy*
5. *Medical transport*
6. *Conference area*
7. *Atrium*
8. *Employees' entrance*
9. *Café*
10. *Facilities*
11. *Employee courtyard*
12. *Training*
13. *Claims center*

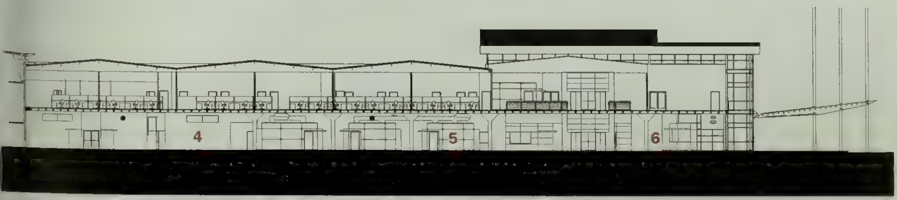


1. *Medical transportation center*
2. *Café*
3. *Atrium*
4. *Case coordination center*
5. *Conference center*
6. *Employee entrance*

The cavernous structure concealed its concrete coffered ceiling and its Karnak-like capitals over the concrete columns (right). The architects exposed the structure, and created a two-story lobby (above and below right).



ECTION A-A



ECTION B-B

ize the plan—the columns mark the space around which the architects placed conference rooms and offices on the vast floors. Passages expand and contract as these offices and conference pavilions grip and release the interior streets These small structures within the larger one create a village scale, catalyzing the open-office field with a lively interior urbanism.

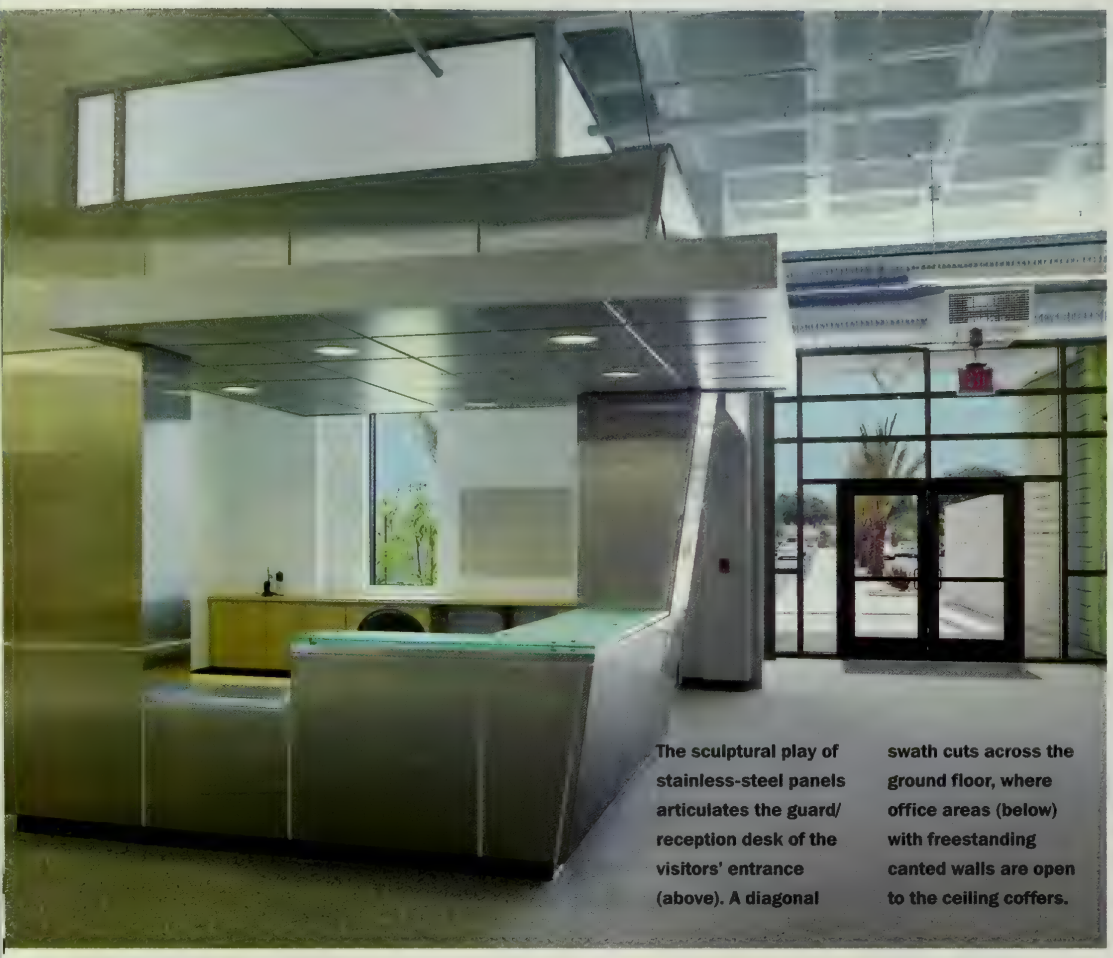
Some of the conference rooms are articulated to become objectlike pavilions—the browed entries, cante walls of the facades, and joinery of the concrete-board fascia confer to each an individuality that counteracts the universality of the original structure. In addition, the architects kept the ceilings of the conference rooms and offices low, to give an intimate scale to the tall spaces, an to let natural light flow in clerestory cavities below the waffle ceiling.

The removal of concrete wall slabs between the structural piers at the building's edge permits generous amounts of natural light to enter the open-plan offices. In order to modulate the sunlight, the designers retrofitted sun shields, shaped again as airfoils, on the fron and back facades. Inside and out, such architectonic pieces give dept and shade to the flat wall planes.

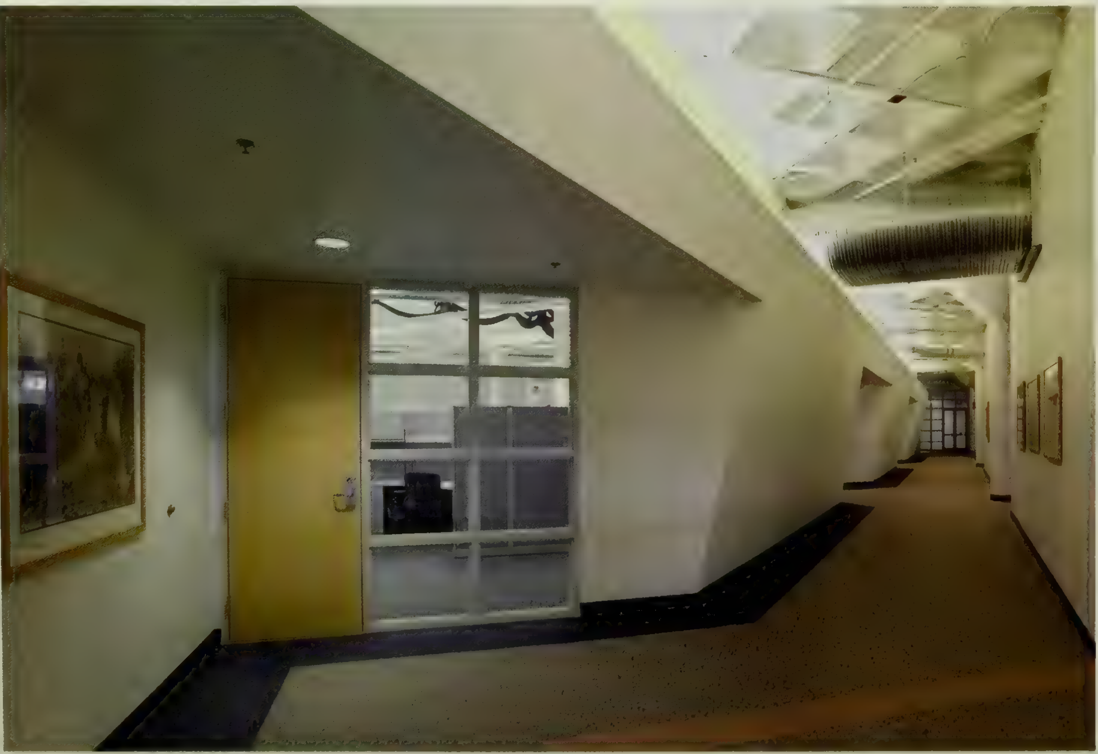
Commentary

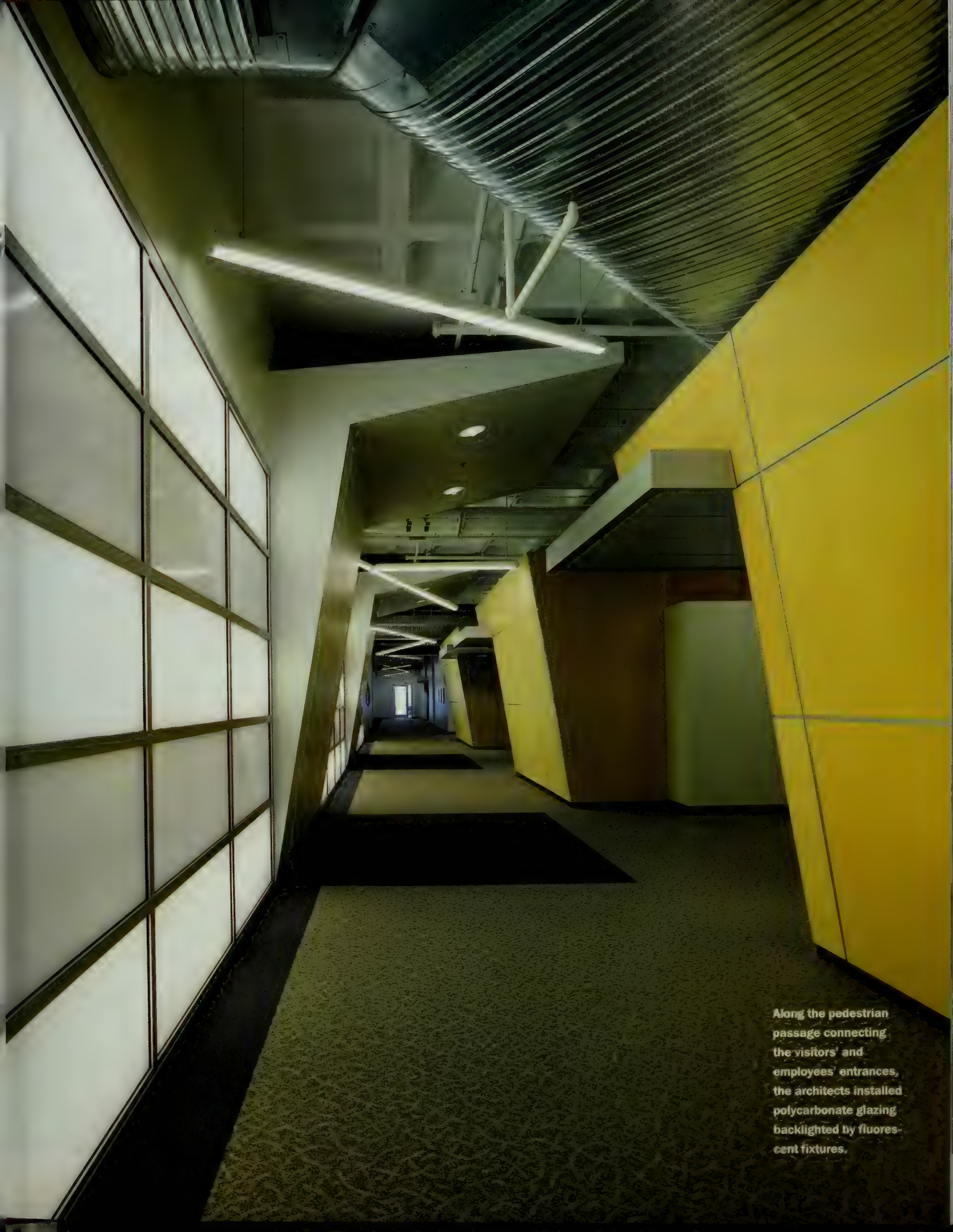
Despite the limiting budget, the architects seized every opportunity to enrich a building that by every measure was impoverished. But what gives the design the additiona edge is the energizing angularity of the geometry that comes from the parti introduced into this inert, uninflected space. On both floors, even the entire ceiling of fluorescent lights is shifted at 45 degrees to the floor plan. Walls lean and dropped-ceilings rise, as though taking off.

Deft, space-defining formal moves endow the building with an aesthetic of energy that charges formerly passive spaces. Now that the building houses a health-care company, it expresses flight in a way never achieved in its original incarnation. The architects brought energy to space. ■



The sculptural play of stainless-steel panels articulates the guard/reception desk of the visitors' entrance (above). A diagonal swath cuts across the ground floor, where office areas (below) with freestanding canted walls are open to the ceiling coffers.





Along the pedestrian passage connecting the visitors' and employees' entrances, the architects installed polycarbonate glazing backlighted by fluorescent fixtures.

The Barn at Fallingwater
Mill Run, Pennsylvania

2

BOHLIN CYWINSKI JACKSON EMPLOY CREATIVE RENOVATION ON AN OLD BARN USED BY THE WESTERN PENNSYLVANIA CONSERVANCY.

By James Murdock

Architect: *Bohlin Cywinski Jackson—John C. Jackson, AIA, principal; Roxanne Sherbeck, AIA, design manager; Sarah Drake, AIA, project manager; Michael Gwin, Li Chuin Toh, Maria Velisaris, Kai Vern Tang, Jarrett Pelletier, design team*
Client: *Western Pennsylvania Conservancy*
Engineers: *Atlantic Engineering Services (structural); H.F. Lenz (m/e/p)*
Consultants: *Marshall Tyler Rausch (landscape architects)*
General contractor: *Clearview Project Services*

Size: *12,000 square feet on 5,000-acre site.*
Cost: *Withheld*
Completion date: *2003*

Sources
Parallel strand lumber framing members: *Trus Joist/Weyerhauser (Parallam)*
Wood and glass windows and doors: *Marvin*
Strawboard panels: *BioFab*
Sunflower seed biocomposite panels for cabinets and paneling: *Phenix Biocomposites*
Interior ambient lighting: *Zumtobel; Spero Electric*

For more information on this project, go to Building Types Study at **www.archrecord.com**.

Although its name might suggest a closer physical relationship, the Barn at Fallingwater is located a quarter of a mile up the road from Frank Lloyd Wright's 1937 masterwork. Visually, the barn is also somewhat removed from Wright's aesthetic—the Western Pennsylvania Conservancy, a nonprofit that owns both buildings, stipulated as much when commissioning the barn's transformation—but nonetheless, they do bear a resemblance. Both Fallingwater and the revamped barn are at one with nature: one through design, the other through materials.

Program

The conservancy maintains more than 5,000 acres of land adjacent to Fallingwater. Although it occupies offices on-site and in Pittsburgh, the organization needed more desk space and meeting rooms. It also wanted exhibition space and a retail shop that would be visible from the main county road.

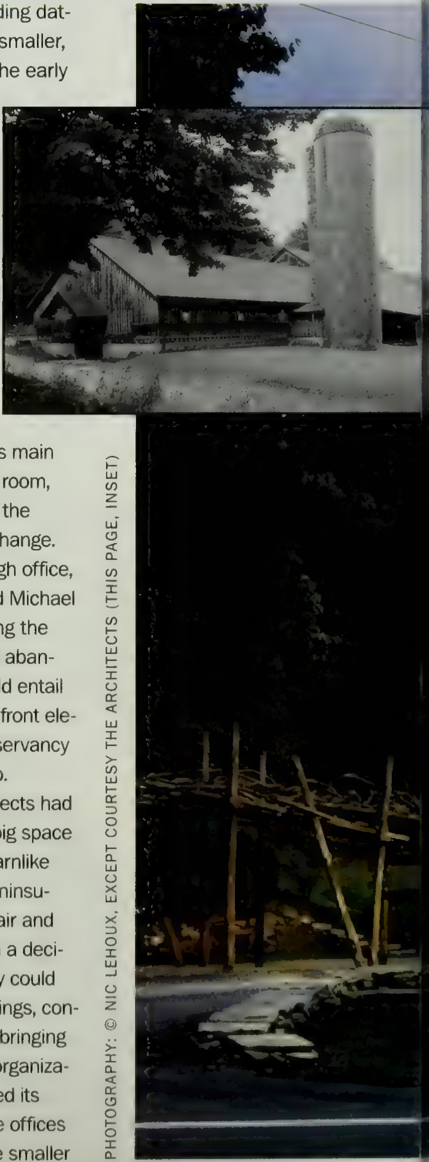
At first, the conservancy thought only a new building could accommodate these needs. But since the group seeks to protect natural landscapes, and the staff felt uncomfortable with new construction, it decided to convert a nearby storage barn instead.

The Barn at Fallingwater is actually two structures set into a hillside: a large, two-level building dating from circa 1870, and a smaller, single-story addition from the early 1940s. Since barns are associated with the rural landscapes that are disappearing across Pennsylvania, the conservancy decided to restore this barn's iconic silo.

Solution

Bohlin Cywinski Jackson struggled with how to make use of the older barn's main space, a 5,000-square-foot room, with its primary entrance at the rear because of the grade change. Architects from the Pittsburgh office, Roxanne Sherbeck, AIA, and Michael Gwin, AIA, considered placing the retail shop on this level, but abandoned the idea since it would entail adding a bulky entry on the front elevation. Fortunately, the conservancy wasn't committed to a shop.

At this point, the architects had a revelation: just leave the big space untouched, preserving its barnlike character with unfinished, uninsulated wallboards that allow air and light to circulate freely. Such a decision meant the conservancy could rent out the space for weddings, conferences, and other events, bringing a windfall in income to the organization. The architects excavated its lower level for administrative offices and storage. Meanwhile, the smaller



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James Murdock writes about architecture from New York City.

barn built around 1870
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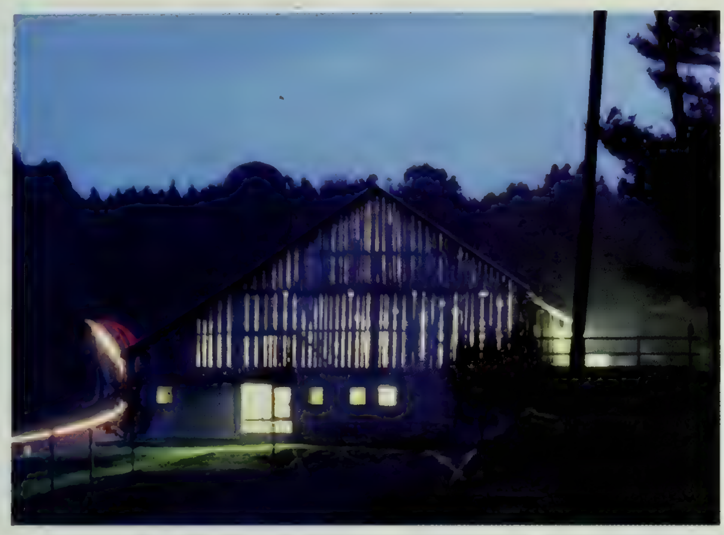
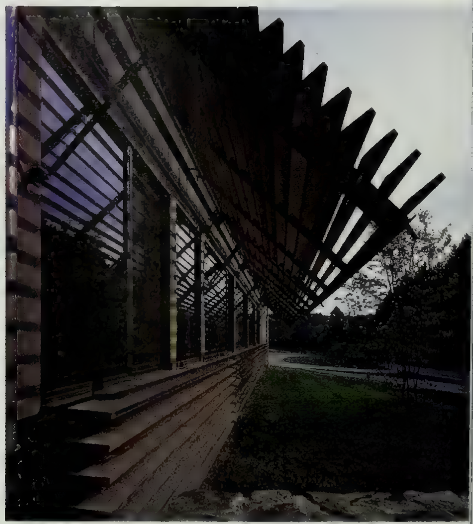
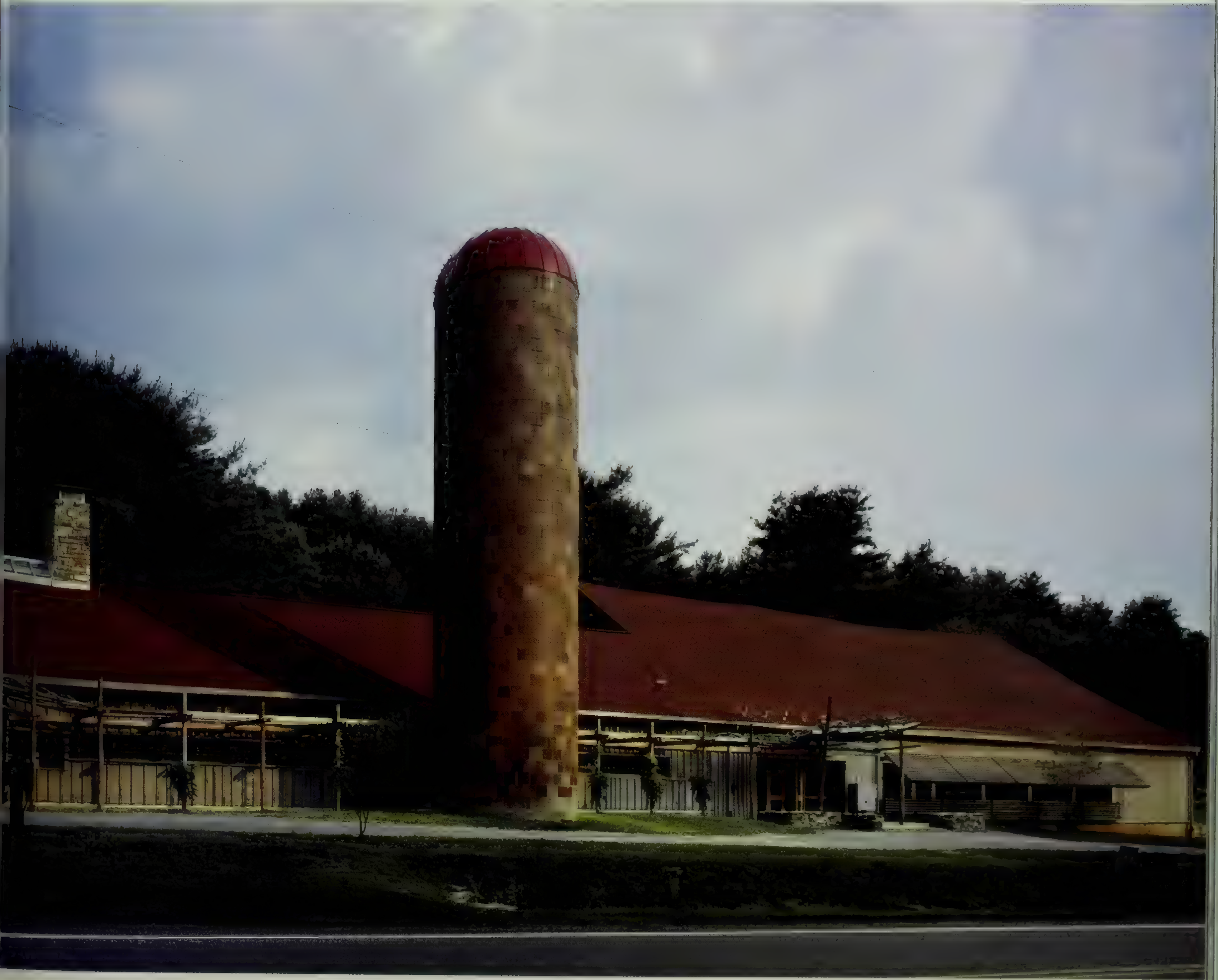
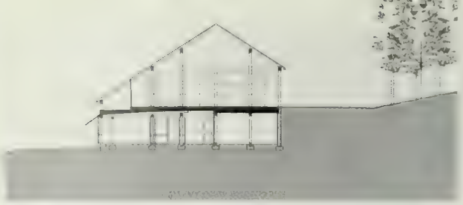
alkway (below).

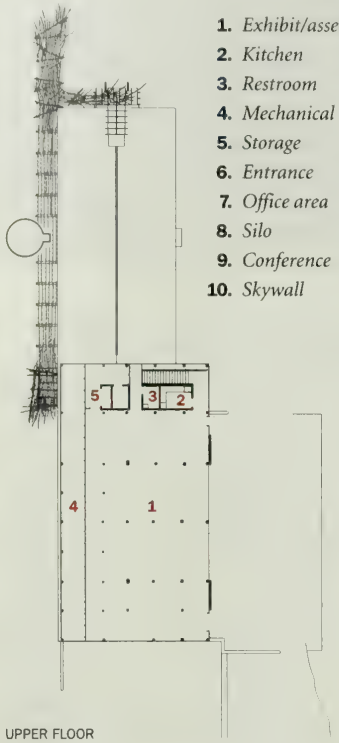


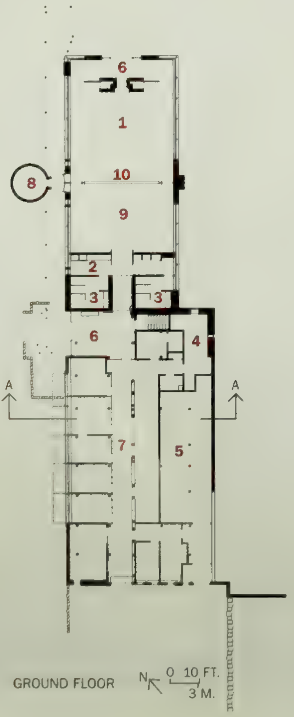


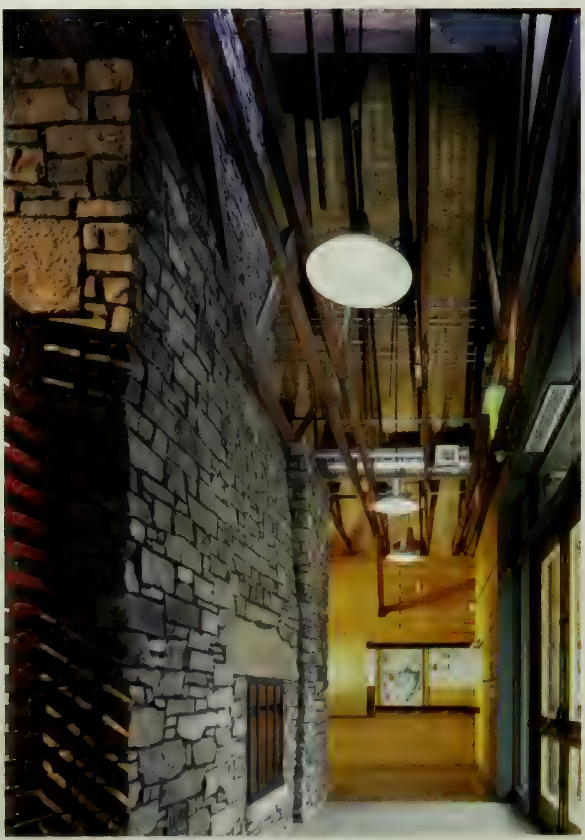




1. *Exhibit/assembly*
2. *Kitchen*
3. *Restroom*
4. *Mechanical*
5. *Storage*
6. *Entrance*
7. *Office area*
8. *Silo*
9. *Conference*
10. *Skywall*







In order not to destroy the character of the main barn's upper loft space (opposite), with its heavy timber, mortise, and tenon frame, the space was left raw, with natural light admitted through gaps in the vertical siding. Fireproof straw bale panels (left) line the stair, and local fieldstone was used to create a large fireplace wall in the 1940s addition (bottom).

addition, formerly a dairy barn, now contains meeting rooms that can double as an exhibition hall.

Ecofriendly elements throughout the Barn at Fallingwater earned it an AIA/COTE Green Project Award, and it is expected to receive LEED Silver certification. For example, wall paneling consists of 2-inch-thick straw bales, while maple flooring in the big barn was salvaged from a demolition job. Other features include geothermal wells and a zero-discharge wastewater-treatment plant.

Commentary

Once considered a problem, the unprogrammed large space is now the project's selling point. The room's four oversize doors are opened during warm months, effectively dissolving its eastern wall. Even on rainy days, light filters through gaps between the boards, bouncing off the glossy floor and suffusing this space with a transcendental glow.

An eclectic material palette in the meeting rooms also preserves the feel of a barn. The contractor reused cedar planks, moving them from the ceiling to the walls, and uncovered glazed terra-cotta wainscoting, a remnant of the space's past life as a milking facility.

Due to a prosaic choice of materials, the administrative offices are the only insertion that feel alien to the barn aesthetic. Happily, the architects softened the exterior impact of new windows by adding a screen of wood louvers. But they overreached when designing a trellis for the front walkway. Made of mountain laurel branches, it will eventually be covered by vines. For now, though, the trellis takes the green concept a step too far and feels forced. ■

Local Union 580
Long Island City

3

DANIEL GOLDNER ARCHITECTS DEFTLY ORCHESTRATES AN ASSEMBLAGE OF METALS IN A BUILDING RENOVATION TO SIGNIFY A UNION'S IDENTITY.

By Suzanne Stephens

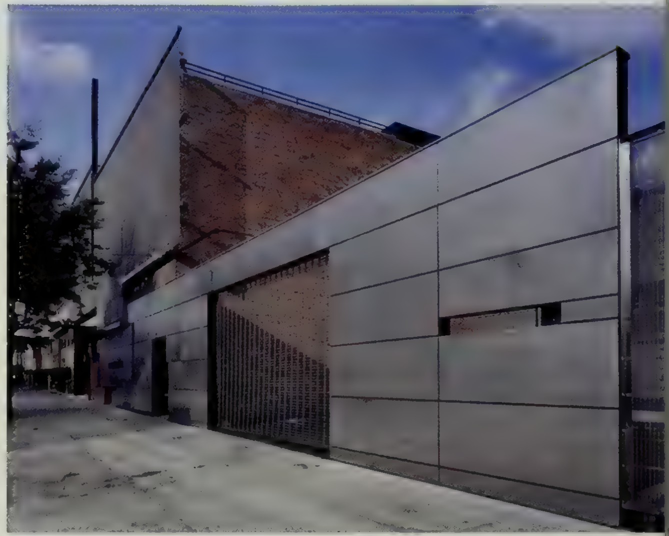
Architect: *Daniel Goldner Architects—Daniel Goldner, principal; Davis Iszard, project executive; Ashley Wilson, project architect; Jimmy Counts, project manager*
Client: *Ironworkers Local 580: Apprentice and Training Facility*
Engineers: *Wexler and Associates (structural); John Guth Engineering (m/e/p)*

Size: *18,000 square feet*
Cost: *Withheld*
Completion date: *2004*

Sources
Stainless-steel-mesh screen: *GKD*
Resin-laminated glass: *Rudy Art Glass*
Structural glass: *Depp Glass*
Interior acoustical and suspension-grid ceiling: *Armstrong*
Custom metal paneling, windows, entrance doors, and entrance-door pulls: *Empire Architectural Metal*
Paints and stains: *Benjamin Moore (interior paints); Carboline (fire-rated intumescent paint over steel columns)*

For more information on this project, go to Building Types Study at ***www.archrecord.com***.

Long Island City, Queens, may have gained an artistic aura by being the home of P.S. 1 Contemporary Art Center, the Museum of the Moving Image, and the Noguchi Museum, among others. But much of the area is littered with dreary, low-rise masonry structures devoted to light industry and related enterprises. Nevertheless, Ironworkers Local 580: Apprentice and Training Facility (for ornamental and architectural ironworkers) shows how a renovation can artfully change that tone.



The brick facade and parking court (left) was covered in a grid of bead-blasted stainless-steel panels with Z-clip reveals (above). A stainless-steel-mesh screen is hung from the second-story roof (opposite).

Program

In transforming a scuzzy medical-supply storage facility with a setback brick garage into the 18,000 square feet of classrooms and workshops, the union leaders wanted to signify the value of their craft through the design of the facade and the public spaces. They didn't have to look far: Daniel Goldner Architects, based in Manhattan, had remodeled a nearby building for two structural-ironworker unions in a clean, planar mode evocative of the International Style. In the case of Local 580, it encouraged Goldner to make use of a range of metals to fully emphasize the union's particular craft.

Solution

Goldner and his team gave the facade, entrance lobby, and stairway the full-metal-jacket treatment, in addition to revamping the steel-framed interior for a workshop, an adjoining welding shop, and classrooms inserted in the basement. With the new facade, Goldner left most of the brick exterior wall intact (infilling places with concrete block). Over that he designed an outer carapace of assorted ³⁄₁₆-inch-thick metal panels at the ground floor—an articulated assemblage of bead-blasted stainless-steel (with a soft luminous sheen), pearlized stainless-steel doors, and oxidized steel at the north end—plus an etched-brass pylon. This Modernist composition, limned by reveals and shallow volumes pulled out from the brick backdrop, is further dramatized by slotlike horizontal and vertical windows incised into the

planes and filled with lime-green, cobalt-blue, and yellow tinted glass.

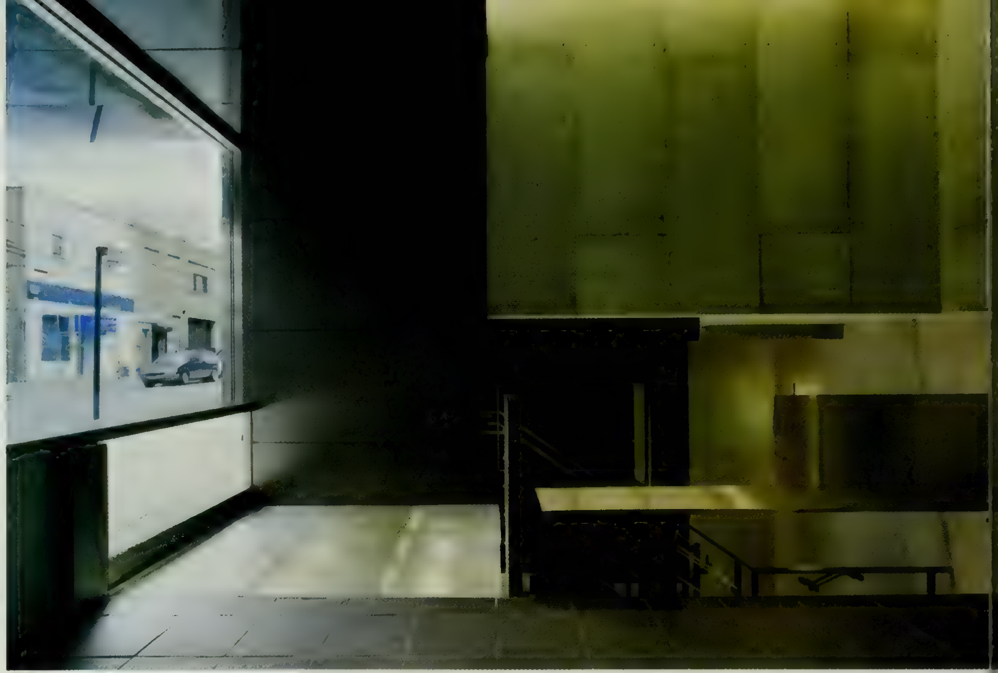
At the roof line, Goldner hung a 27-foot-high, stainless-steel-mesh screen and clipped it in place over the second floor. Viewed at an angle, the screen appears opaque; dead-on it subtly discloses the brick wall behind it. To underscore this revealing-by-concealing approach, Goldner stopped the screen above the metal panel base in certain areas so that unadorned glimpses of the brick wall remain on view. The screen also allows the second floor, used as rental space, to receive natural light through existing windows.

An aluminum canopy with a painted black soffit continues into the lobby at an 11-foot height, slightly compressing space in the 13-foot-6-inch-high area. Anchored by the black slate floor, the dramatic interplay of steel, brass, glass, and prepatinated copper planes accentuates the dimensions of this small, cubiform hall. On the lower level, another lobby receives natural light through the glass floor above and in turn opens onto trimly designed corridors and classrooms.

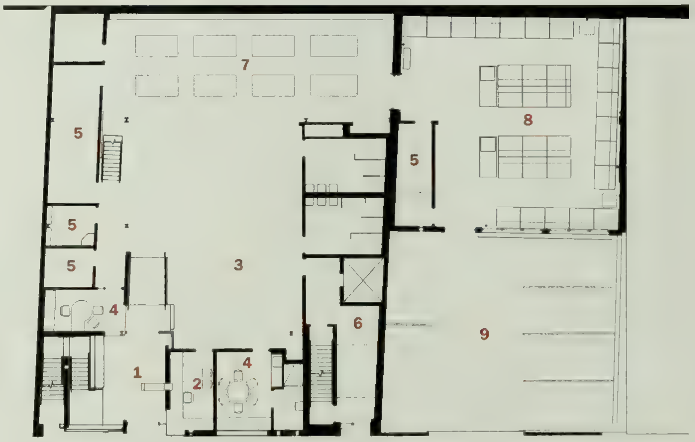
Commentary

Granted, the actual classrooms and workshops inside the building lack the design drama of the facade and the public spaces. However, the latter carry the day, especially as an urbanistic gesture. If only similar renovations would follow suit. For the moment, Goldner's efforts stand out as a visual surprise against the dreary backdrop of moldering industrial buildings.

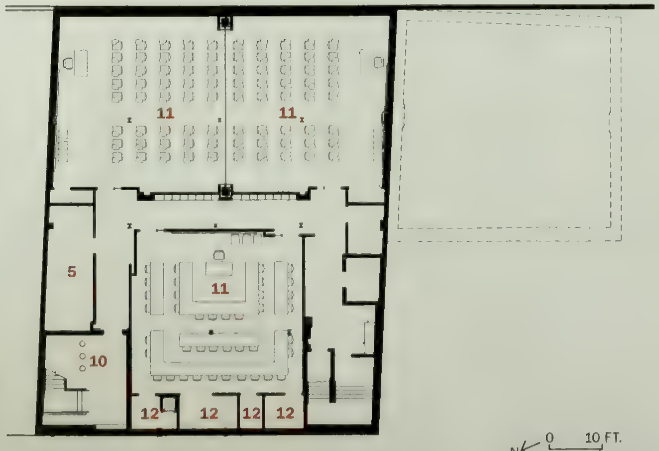
The renovation obviously succeeds in advertising the possibilities of the ornamental- and architectural-metal workmanship the union is advancing. Moreover, it reaffirms one's faith in the effect of architecture on everyday places. Goldner has shown that craft and material, combined with proportional and compositional sophistication (not surprisingly, he used to work for Edward Larrabee Barnes) can go far in improving the urban landscape—even if it is step-by-step. ■



In the first-floor lobby (above), a stainless-steel bench seems to float over structural glass. It hooks into the low brass partition that engages the luminous, textured-glass floor of the stair landing. Above the bench, prepatinated copper panels define the lobby space.

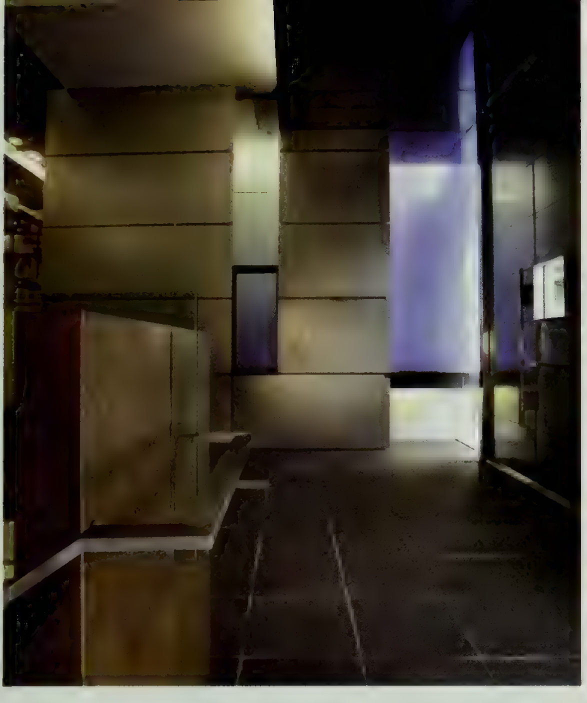


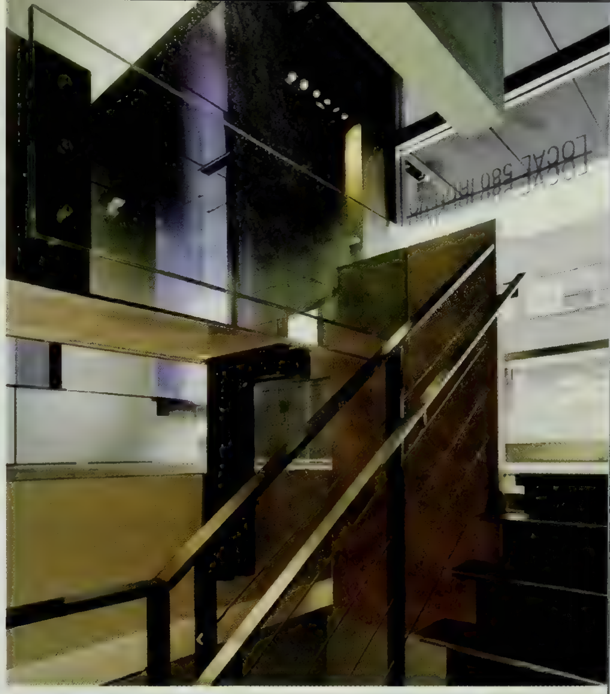
FIRST FLOOR

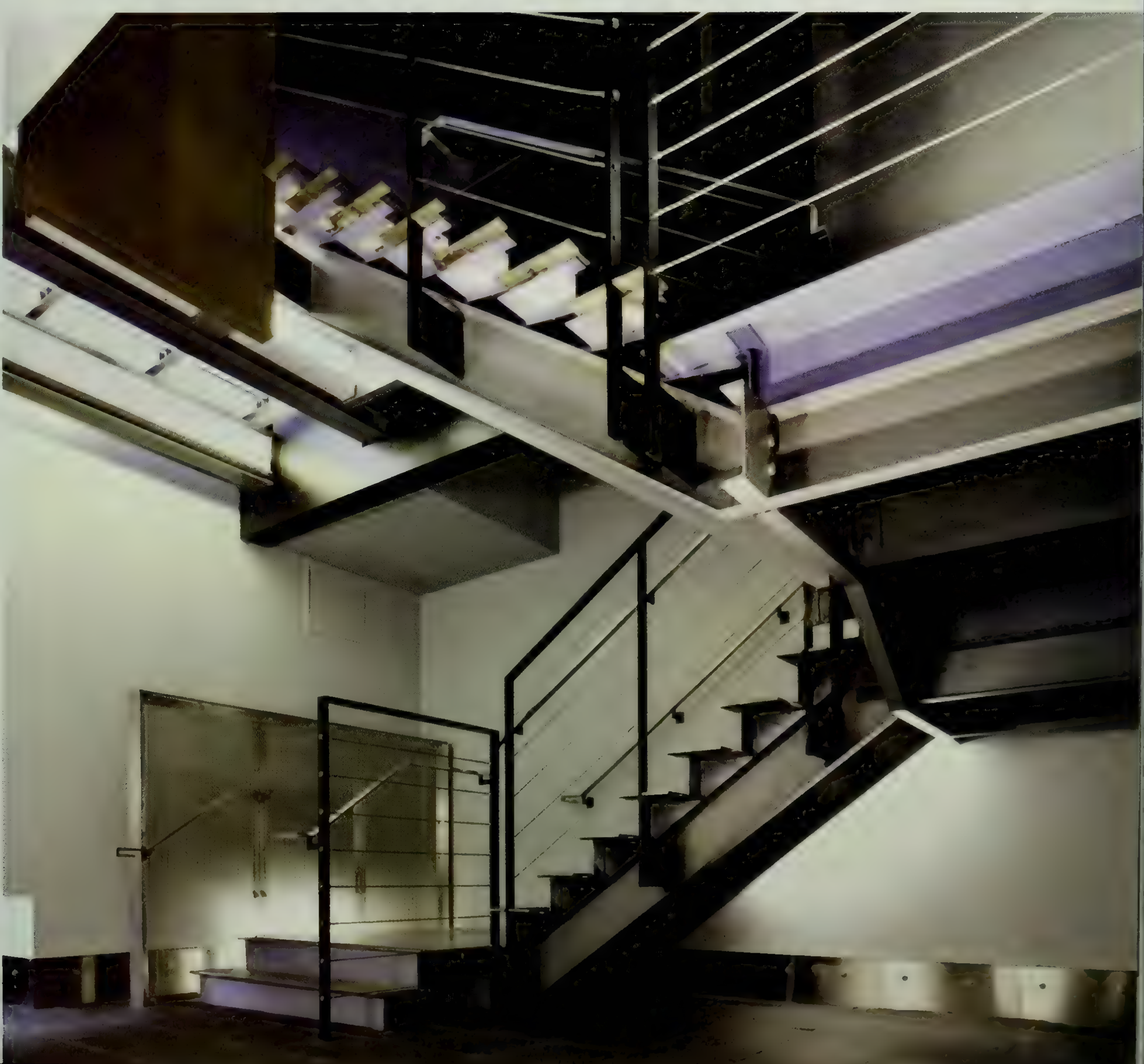


BASEMENT

1. *Lobby*
2. *Administration*
3. *Workshop*
4. *Office*
5. *Storage*
6. *Tenant entry*
7. *Burning tables*
8. *Welding room*
9. *Parking*
10. *Lower-level lobby*
11. *Classroom*
12. *Mechanical*







An administration office with tinted, resin-laminated glass adjoins the lobby (above left), where the dark slate floor echoes the tone of the black-painted aluminum soffit of the canopy extension. Stainless-steel treads, lightly poised on the structural-steel spine of the stair (above right), lead down to the classroom area (right), where the lobby receives natural light filtering through the glass floor above.

Masanari Murai Art Museum
Tokyo, Japan

4

KENGO KUMA HAS GIVEN A NEW MEANING TO THE TERM "EXTREME MAKEOVER" WITH HIS TRANSFORMATION OF AN ARTIST'S HOUSE.

By Naomi R. Pollock, AIA

Architect: *Kengo Kuma & Associates—Kengo Kuma, principal; Kenya Hara, graphics*
Client: *Itsuko Murai*
Engineers: *K. Nakata & Associates*
General contractor: *Matsushita Industry Company*

Size: *1,761 square feet*
Cost: *Withheld*
Completion date: *2004*

Sources
Locksets: *MIWA Lock Company*
Security devices: *ALSOK Group*
Spot lighting: *iGuzzini*
Home elevator: *Mitsubishi*

For more information on this project, go to Building Types Study at **www.archrecord.com**.

It is often said that one person's junk is another's treasure. But to Masanari Murai, one of Japan's first Modern painters, everything was a treasure. "He just hated to throw stuff out," says Itsuko Murai, the artist's widow and the director of the Masanari Murai Art Museum. Moved by the beauty inherent in coffee pots, clay dolls, and countless everyday objects, the artist preferred adding rooms to parting with possessions. Instead of deaccessioning, he simply enlarged his house. Like Masanari's bold, abstract canvases, his house, with its multiple additions and voluminous contents, was a work of art. "I thought the house was chaotic, but I like that kind of chaos," says architect Kengo Kuma. However, it took the Tokyo architect's editing as well as design skills to transform this eclectic mixed-media creation into a museum.

The entrance to the museum (right) with its recycled slats of wood (opposite) is located on the east facade. The former south and east facades (above top left) enclosed storage areas, and the door to the atelier was on the north side (above middle). The car was moved from the northwest corner of the site (above right) to the entrance side.

Program

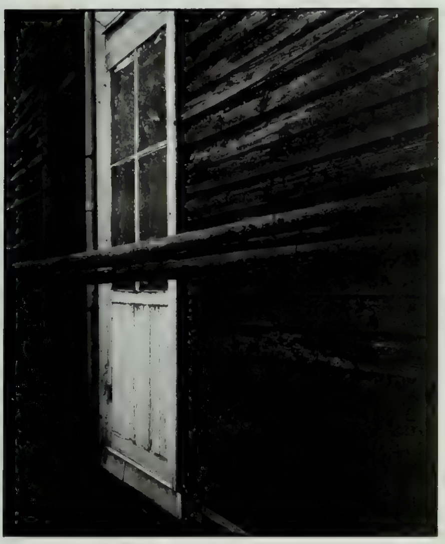
When the museum was first being planned, there was talk of leaving the rambling house as it was and simply opening it up to the public. But this proved impossible. Built in 1938, the original house was a "cottage style" wood frame structure located in the middle of a residential neighborhood west of central Tokyo. "I loved that house because it was very similar to the house where I was born," says Kuma. By the time the artist died in 1999, the cluttered house had become a fire hazard that ultimately had to be taken down. Instead, Kuma preserved the essence of Masanari's home by deftly salvaging parts of the old building and incorporating them into his new architecture.

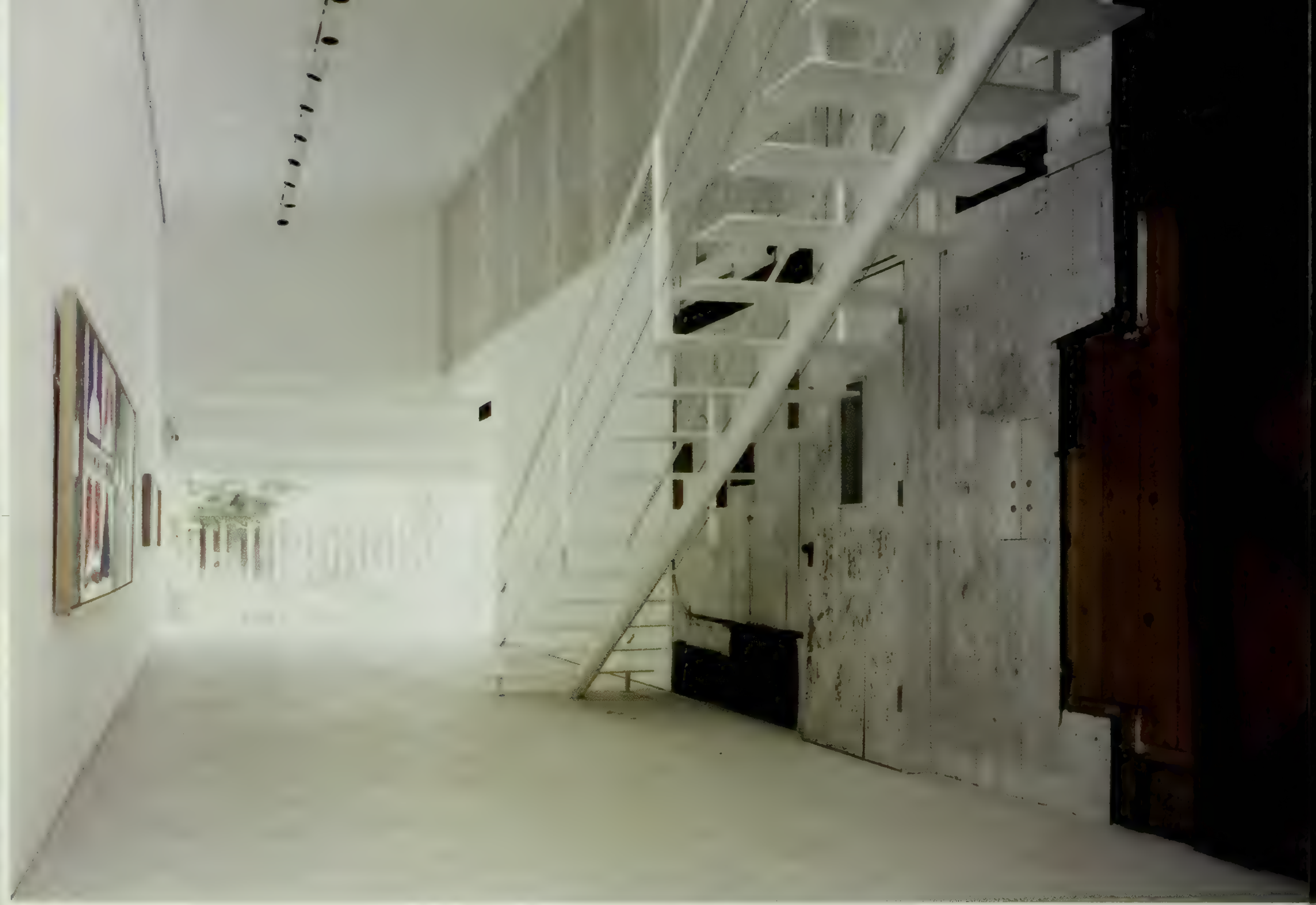
Solution

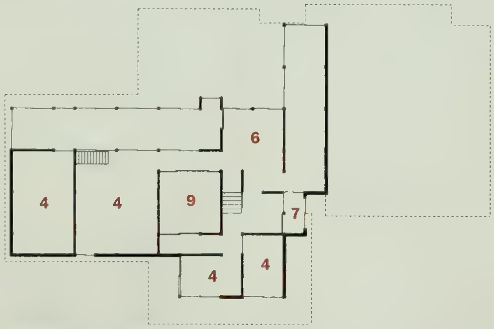
The heart of Kuma's 1,761-square-foot museum is a faithful reconstruction of the artist's atelier: a pastiche of wood siding, door frames, and other lumberyard leftovers artfully added to the main house in the 1950s by a local carpenter. Originally, this atelier jutted out into the garden, but Kuma treated it like an artifact by encas-

Naomi Pollock, AIA, is RECORD*'s special correspondent in Tokyo.*

PHOTOGRAPHY: © DAICI ANO ARCHITECTURAL PHOTOGRAPHY, EXCEPT AS NOTED: RYUJI MIYAMOTO (OPPOSITE, TOP THREE)

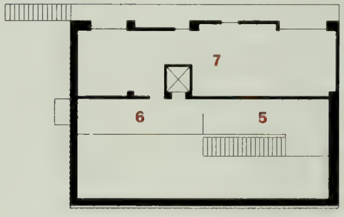




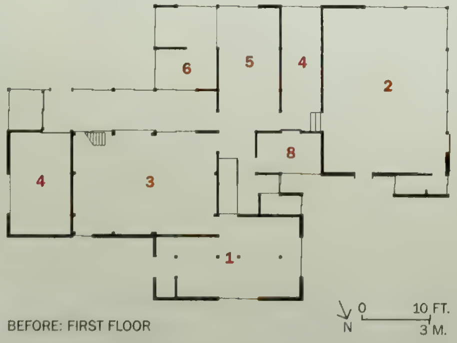


BEFORE: SECOND FLOOR

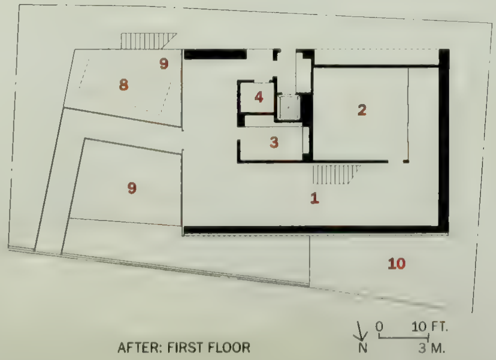
1. *Former entrance hall*
2. *Atelier*
3. *Atelier/storage*
4. *Storage*
5. *Kitchen*
6. *Bedroom*
7. *Toilet*
8. *Bath*
9. *Japanese room*



AFTER: SECOND FLOOR

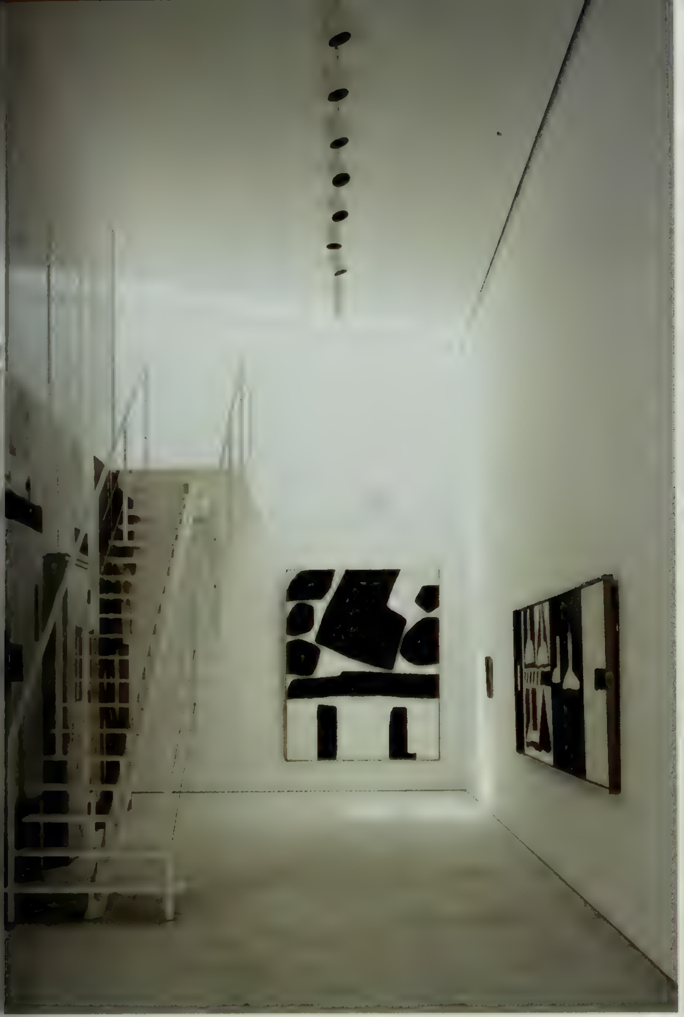


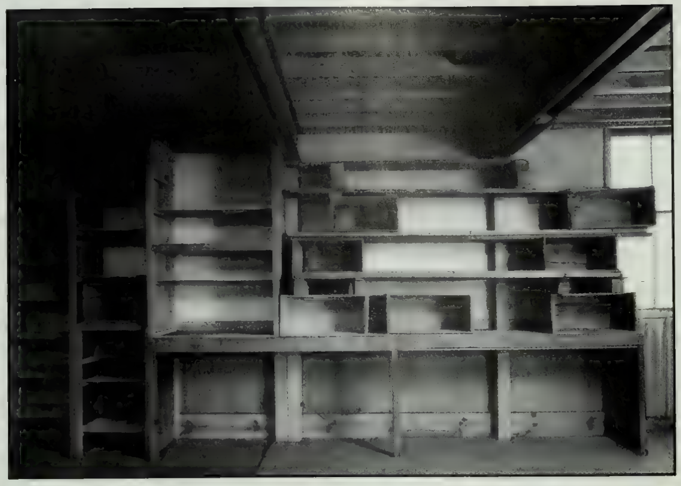
BEFORE: FIRST FLOOR

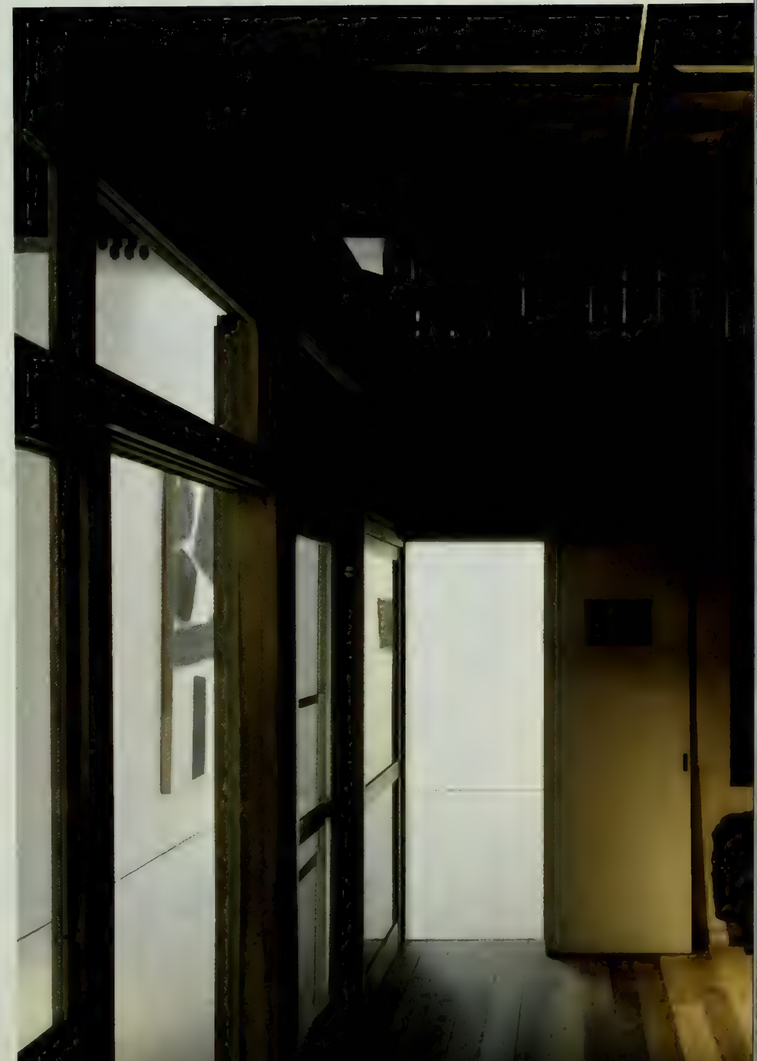


AFTER: FIRST FLOOR

1. *Main gallery*
2. *Existing ateli*
3. *Office*
4. *Bathroom*
5. *Upper galler*
6. *Archive*
7. *Apartment*
8. *Existing car*
9. *Artist's instal*
10. *Parking*



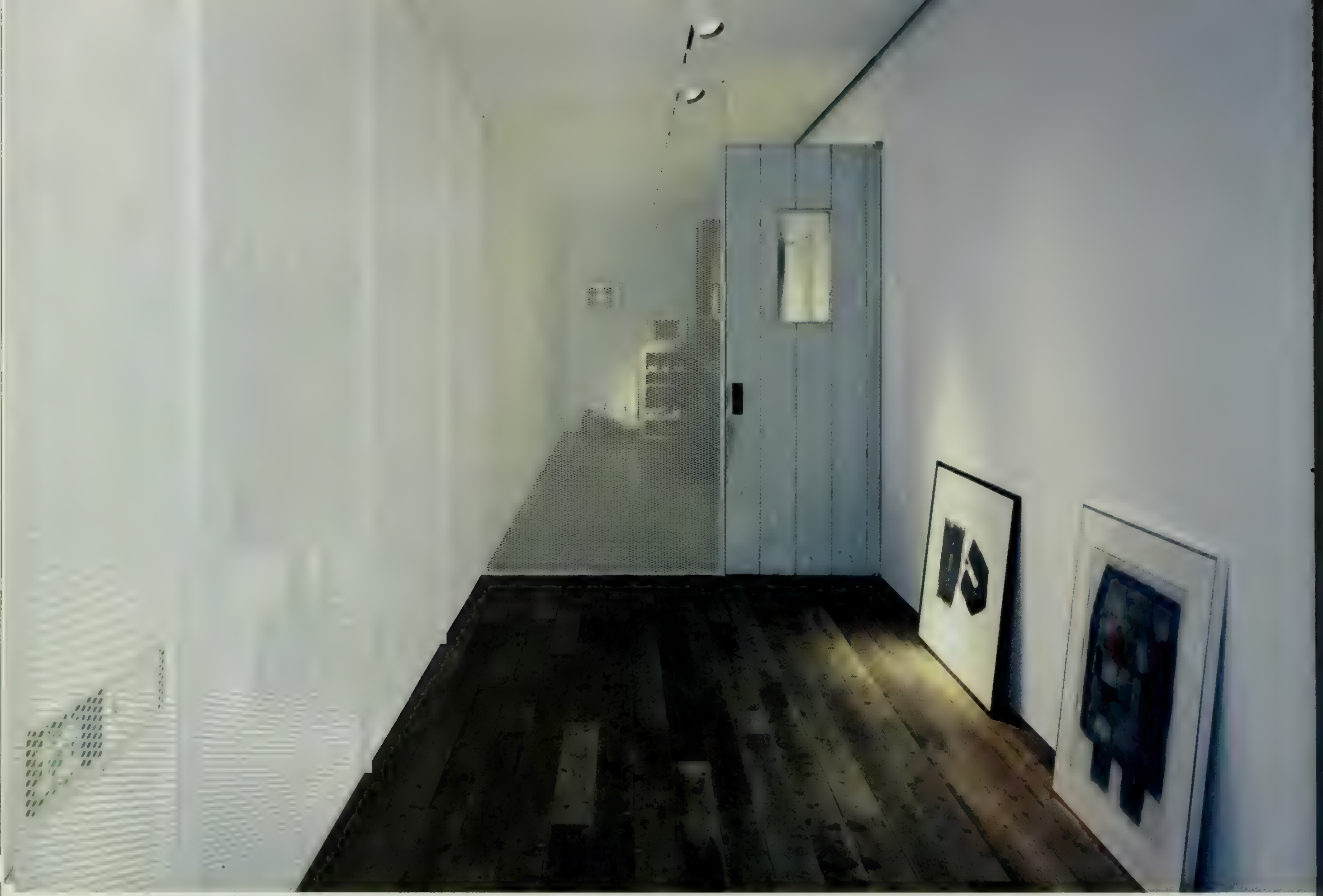




ing it within the new museum's steel-frame exterior enclosure. Between the atelier and the new outer skin is a high-ceilinged trough of space for a gallery where selections from the artist's vast collection of objects are displayed alongside his own artworks—paintings, ceramic vessels, and other pieces made of wood and metal. Thin steel stair treads lead up to the second-floor display area masked by metal-mesh walls and an efficiency apartment for Mrs. Murai. Kuma's palette of pristine, white walls, neutral concrete floors, and crisp detailing complement the robust colors and strong forms of the artworks as well as contrast with the atelier's dark wood surfaces and well-used furniture.

Kuma's intention was not simply to place the artist's home and its contents on a pedestal: He integrated old and new. An elegant display case Kuma created stands on three legs of black steel and a fourth fashioned from a newel post that once stood at the top of the stairs. Made of wood, the post still bears teeth marks left years ago by Masanari's dog. A true marriage of the architect's passion for materials and the artist's love of the memory-laden, the new facade is covered with irregular, hand-cut wood planks harvested from the old house at the time of its deconstruction. "We didn't have quite enough boards, so we put spaces between them," explains Kuma. The rhythmic

The old atelier on the first floor (top right) has been salvaged (right) and placed within a new, white steel-framed container. In the main gallery (opposite and above), paintings by Murai are displayed with collaged elements from the former structure.



The former bedroom on the second floor (left) looked into the stair hall. This level, with original plank floors, is now partially enclosed by a white metal-mesh screen (above). It is devoted to display, storage, and an apartment for Mrs. Murai.

pattern bears a strong resemblance to the wood louvers that Kuma often uses in his architecture.

Below the slat-covered upper wall, the plate-glass facade's smooth surface is interrupted only by the front entrance. The huge window wall looks out at two, 6-inch-deep pools separated by the walkway leading up from the street. It was Kuma's idea to place Masanari's treasured Toyota, one of the carmaker's earliest models, in one of the ponds. Though the car has not been driven since the early 1970s, Masanari kept it in his garden. "We just enjoyed looking at the car getting older and changing color amid nature," explains Mrs. Murai.

Commentary

In Japan today, very few people share Mrs. Murai's sentiment when it comes to holding onto old architecture. And retrofitting existing structures to comply with the country's stringent earthquake code can be daunting even to the most determined preservationist. "It frequently costs more to renovate than to start over," says Kuma, who notes that "clients here are just beginning to understand the value of renovation." Since the old building had to be virtually demolished to build the new museum, this project goes beyond what you might call an "extreme makeover." Still, Kuma's building succeeds in preserving the spirit of the artist and his unique house. ■

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An international competition for new housing in New Orleans

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Programmatic elements include:

- Single family housing
- Multi-family housing
- Mixed-use urban planning

Other programmatic elements:

- This competition encourages close attention to issues of sustainability, both in urban planning and architectural desi
- Contestants are encouraged to incorporate modular or pre ricated building products and processes wherever possible

Important Note: While the competition welcomes visionar hypothetical proposals, contestants are encouraged to cons that New Orleans faces a severe and immediate housing c and is in need of practical, affordable solutions to this proble

Competition Entry:

Go to **www.architecturalrecord.com** for submission requ ments and more specific programmatic information. Competi specifics will be included in the competition packet. All en must be received no later than **March 1, 2006.**

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The Perils of Restoring “Less Is More”

KRUECK & SEXTON ARCHITECTS FACED TREMENDOUS CHALLENGES IN THE RESTORATION OF MIES VAN DER ROHE’S 1956 MASTERPIECE, S.R. CROWN HALL, AT THE ILLINOIS INSTITUTE OF TECHNOLOGY

By Sara Hart

Formal ceremonies celebrating architecture are usually reserved for ground breakings, openings, or reopenings, rarely for closings. But on May 17, 2005, S.R. Crown Hall at the Illinois Institute of Technology (IIT), designed by Ludwig Mies van der Rohe and completed in 1956, was closed for restoration and renovation amid much fanfare. A hundred or so admirers of the school and the architect convened to witness a symbolic demolition—the inverse of a ribbon cutting—to launch the restoration. Mies’s grandson, Chicago architect Dirk Lohan, won the opportunity to smash one of the 10-foot-tall windows at an online auction on eBay, sponsored by the Mies van der Rohe Society (mies.iit.edu).

In the audience at the ceremony was Mark Sexton, AIA, principal of Krueck & Sexton Architects, the local firm charged with this phase of an ongoing restoration of Crown Hall and other Mies structures. Sexton admits that after the sledge hammer shattered the glass and the university president announced that the reopening would take place in 15 weeks, reality set in, and his heart began to race. Although an opportunity of a lifetime for any firm, performing reconstructive surgery on what *Time* magazine called “one of the world’s most inspiring and astonishing structures” is an undertaking fraught with danger, suggesting that a tight schedule might have been the least of Sexton’s worries. Crown Hall is the home of IIT’s College of Architecture, where Mies was director from 1938 until 1958. Thirty-six years after his death, the faculty still consists of Mies disciples, who, with a student body of 600, consider themselves conservators of the masterpiece, which received Chicago landmark status in 1997 and became a National Landmark in 2001.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month’s ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 156 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include several sponsored sections beginning on page 201.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe the challenges of restoring a Modernist building.*
2. *Discuss the material substitutions made to Mies’s design concept in order to preserve the design aesthetic.*
3. *Explain the problems with the original glass used in the building.*

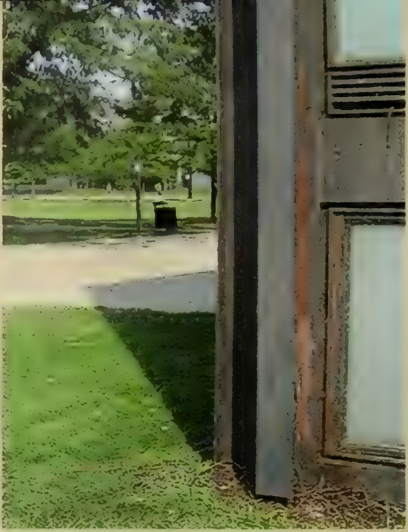
For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.archrecord.com**.

Ludwig Mies van der Rohe circa 1956 standing in S.R. Crown Hall, the architecture school he designed at the Illinois Institute of Technology.

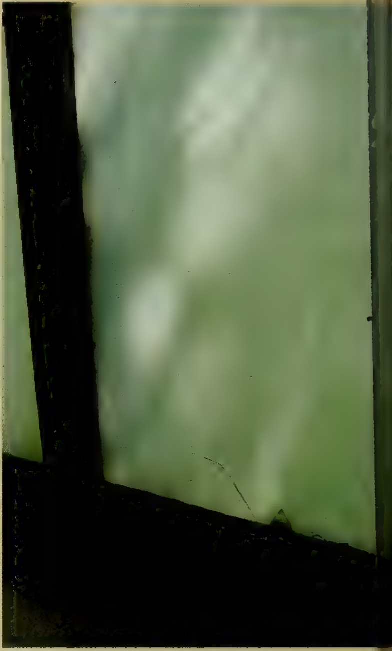
The weight of “almost nothing”

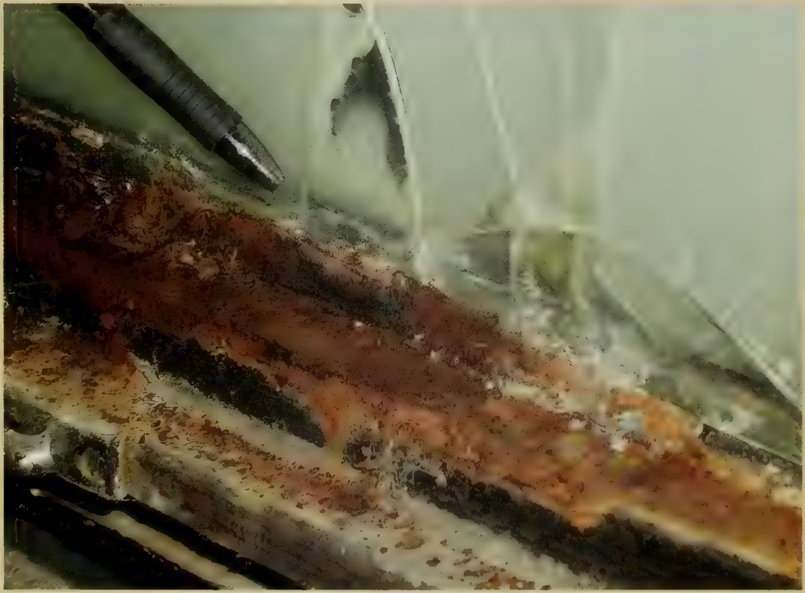
Unlike earlier Crown Hall renovations in which the travertine and steel of the South Porch were replaced and women’s bathrooms were added in the basement, this phase was more complex and intricate. Crown Hall contains the architectural DNA of Mies’s entire aesthetic. The beauty exists paradoxically in the metaphorical nothingness of it. The building is a big box, a “one-room school house,” as Dean Donna Robertson, AIA, has called it. The 120-foot-by-220-foot floor plate seems to hover 6 feet above grade. Meanwhile, the roof hangs 18 feet above the floor from an exoskeleton made of four, 6-foot-deep steel girders. From the inside, the resulting clear-span, “universal space” experience is that of being in a structure with no visible means of support. Furthermore, the curtain wall had enormous expanses of glass held in place by the slimmest of stops.

Ronald Krueck, FAIA, and Sexton, both alumni of IIT, were



Steel corrosion was extensive. The repair cycle included sandblasting, inspection, more sandblasting, and repair. Steel conducted moisture along the base causing condensation in the winter. When the paint is damaged by moisture and exposes the steel to the elements, the steel rusts and forms a red dust (right and below). Corrosion pits form, which produce just enough pressure in the stop to crack the glass (below and far right).





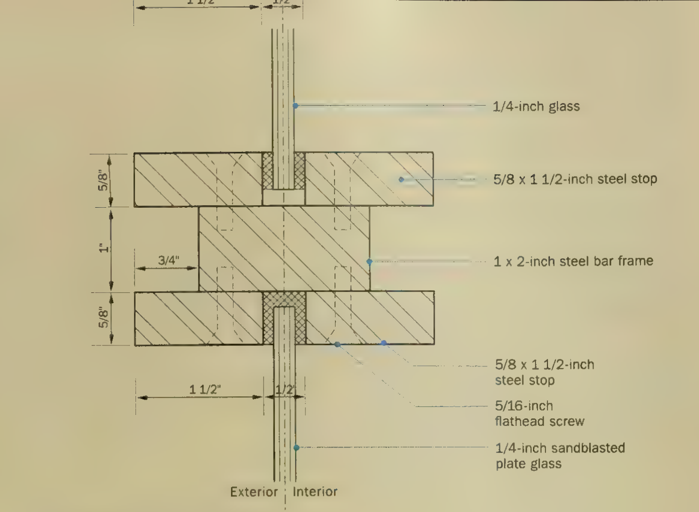
well aware that the starkness of Mies's work does not equate to simplicity, nor was his bias in favor of off-the-shelf components suggest a generic architectural vocabulary. They were ready to preserve and protect every detail, adjacency, span, and material. Still, it takes a lot of research and study to restore "almost nothing." The architects were fortunate to have the services of preservation consultant Gunny Harboe, AIA, of Austin AECOM (formerly McClier).

The scope of work was extensive: The sandblast removal of all lead-based paint from interior and exterior steel and repairs to the members that had rusted. The steel hadn't been repainted in 25 years, so the dense "Miesian black" from photographs had faded to a dull gray. The glass panels did not conform to any code, so they had to be replaced, and the steel stops redesigned. The process also involved refurbishment and reactivation of the blinds, disassembling and retrofitting them with electromagnetic release hardware, and refurbishing the original Ellison stainless-steel doors on the north and south facades. Finally, the $3.6 million renovation included upgrading the bathrooms to meet current ADA accessibility standards.

Obviously, the restoration didn't actually take place in 15 weeks, as the closing ceremony pronouncements suggested. Assessment of the existing conditions, study of Mies's details, and the final design solution evolved over a two-year period. The actual demolition and construction lasted 15 weeks, but when the symbolic shattering took place, every beam, frame, and pane of glass was already fabricated and waiting for assembly nearby. The planning process was methodical, and the execution surgically precise. Much of the credit for this goes to Clune Construction Company, whose scheduling and coordination of the demolition, repair, and reconstruction sequences included a contingency plan for dealing with and solving unforeseen problems while staying on schedule.

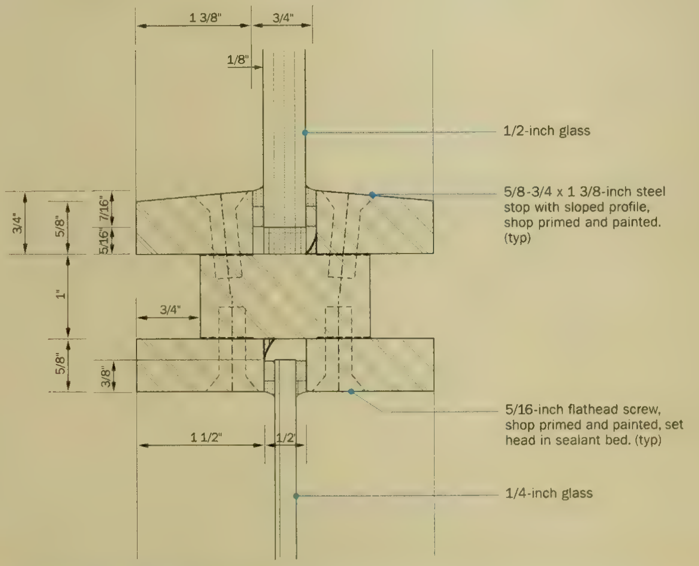
DEMOLITION AND CONSTRUCTION LASTED 15 WEEKS, BUT EVERY BEAM, FRAME, AND PANE OF GLASS WAS ALREADY FABRICATED.

New frames and tops are in place, awaiting installation of the glass (above). The difference between the original detail (top right) and the new one (right) is very subtle.



1/4-inch glass
5/8 x 1 1/2-inch steel stop
1 x 2-inch steel bar frame
5/8 x 1 1/2-inch steel stop
5/16-inch flathead screw
1/4-inch sandblasted plate glass
5/8"
1"
3/4"
5/8"
1 1/2"
1/2
Exterior
Interior

WINDOW DETAIL: ORIGINAL DESIGN



1 3/8"
3/4"
1/8"
1/2-inch glass
5/8-3/4 x 1 3/8-inch steel stop with sloped profile, shop primed and painted. (typ)
3/4"
5/8"
7/16"
5/16
1"
3/4"
5/8"
3/8"
5/16-inch flathead screw, shop primed and painted, set head in sealant bed. (typ)
1 1/2"
1/2
1/4-inch glass

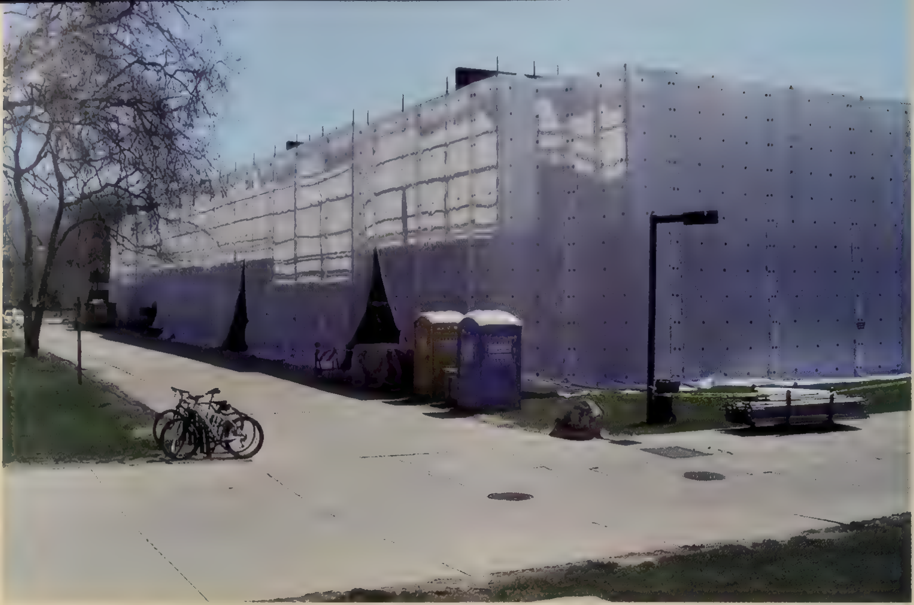
WINDOW DETAIL: RESTORATION DESIGN

The first task was to quickly shroud the entire building in order to contain dust from the lead-based paint that was to be sandblasted off all the steel members. "We divided the building into quadrants," explained Michael A. Tenuta, senior vice president of Clune Construction. "Sandblasting the steel was followed by an inspection, then more sandblasting, then repairs, then another inspection, then the first of three coats of paint. There was no float time, and there was a constantly roving punch list."

The sound of glass shattering

"Mies's design was experimental," explains Sexton. "At the time, glass technology was in its infancy, and there were few regulations. Mies relied on his intuition regarding size." The facade consists of two types of windows. The original upper panels were enormous and not tempered—9 feet 8 inches by 12 feet 9 inches—and only ¼ inch thick. With no codes to dictate size and thickness at the time, Mies was free to push the known limits of engineering. His experiment had mixed results. Great expanses of crystal-clear glass poured daylight into the studio and created the "barely there" effect he sought. However, "great expanses of glass have a tendency to break and fall out in strong winds," Sexton adds. (Anecdotal evidence suggests that no one was ever injured, or at least not seriously.)

In contrast to the perfectly transparent upper panels, the lower units were sandblasted, which provided some privacy for the students, but mostly it served to hide interior activity from view, and thus retained a pristine Modernist face to the public. However, the glass was sandblasted on the interior face. Sandblasted glass is porous and absorbs oil from fingerprints and the adhesives students used to mount drawings on the windows. Due to decades of unintentional damage, the lower units became stained and scratched. In addition, the building was subjected to ad hoc alterations and mandatory repairs between 1970 and 1977. In 1975, Skidmore, Owings & Merrill (SOM) replaced all the glass, including the thin upper panels, which were replaced with ⅜-inch lites. Then, employing new technology for the lower panels, SOM



The contractor shrouded the entire building (above) to keep the dust from the lead-based paint from escaping into the environment. Students work at Mies-designed drafting tables in 1956 (left). Mies's grandson, architect Dirk Lohan, ceremoniously launches the restoration by smashing one of the glass panels.

installed a laminated glass with a mylar interlayer to imitate the translucent qualities of the original sandblasted glass. Although the solution eliminated the staining problem, the result was more reflective than Mies's matte finish, and repairing the repair, as it were, presented a perplexing challenge for Krueck & Sexton.

ALTHOUGH THE SOLUTION ELIMINATED THE STAINING PROBLEM, THE RESULT WAS MORE REFLECTIVE THAN MIES'S GLASS FINISH.

Every solution seemed to create more problems. The first challenge, and the one that generated the most controversy, centered on the upper panels. First of all, the glazed area was too large by code (or common sense) to have the original ¼-inch-thick polished plate glass replaced. To comply with the code, the architects could have simply specified ⅜-inch tempered glass. Keeping in mind that Mies's details are deceptively simple, Sexton recognized that tempered glass could be less than perfect. "When glass passes through an oven during the tempering phase, it can develop the slightest surface wave from contact with the rollers," he explains. The waviness can sometimes be noticeable when viewing reflected images from a distance. This would be unacceptable to even the most forgiving critic.

Now, ½-inch glass doesn't have to be tempered, so Sexton was confident that he could deliver a perfect surface. But, of course, every solution yields a new problem. In this case, the problem was color. Iron in glass gives it a green tint, so the thicker the panes, the greener the tint. Crown Hall was intended to have glass so clear as to seem barely there, which was possible with ¼-inch panes. The architects eventually found a manufacturer that could make low-iron glass in such large sheets, in order to achieve maximum transparency, high-fidelity light transmission, and the kind of brilliance usually reserved for jewelry cases and museum displays.

The 68 original lites of the upper panels were replaced with PPG Starphire (low iron) glass, and the cycle of problems and solutions con-

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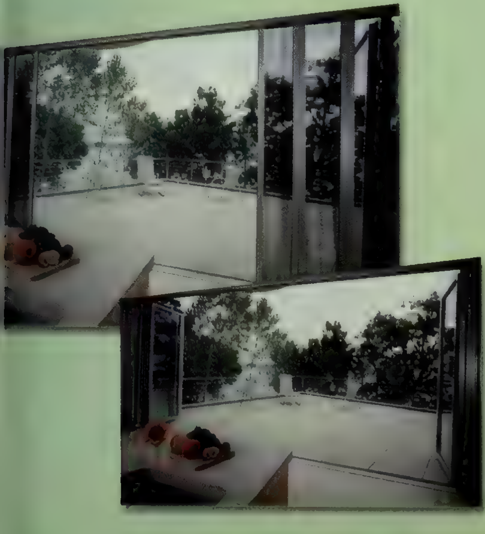

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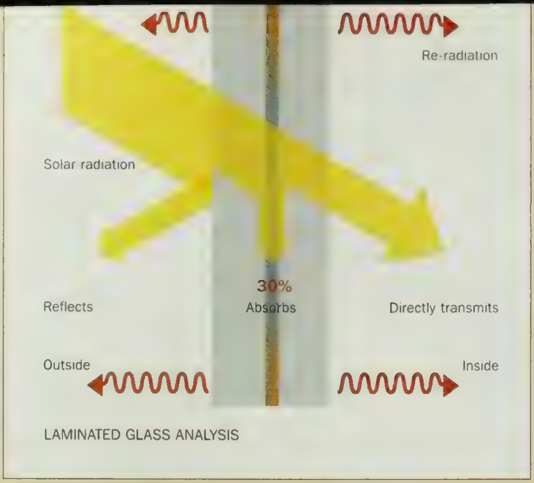
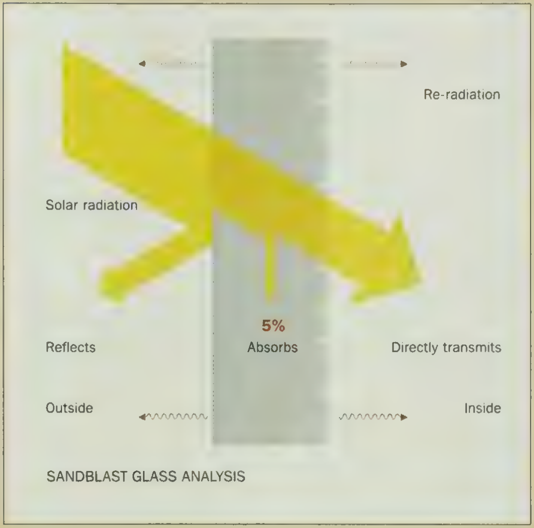


LAMINATED GLASS ANALYSIS



SANDBLAST GLASS ANALYSIS

At least five full-size mock-ups (above) were produced to test several glazing options and the blind replacements. Studies of solar radiation transmission show the difference between laminated glass units (top left) and single sandblasted panes (left).

tinued. Thicker glass is heavier, of course. The new panels weighed 700 pounds, making them way too heavy for the original stops. In other words, the stops had to be enlarged from ⅝ inch to ¾ inch in depth. As the wall sections show, this redesign is subtle enough to be called invisible. However, it has a slope. The architects felt, and the mock-ups confirmed, that a deeper reveal would look heavy. Sexton argued that by sloping the stop from ¾ inch at the glass to ⅝ inch at face, it would read the same as the original. The purists rebutted that it would be blasphemous to introduce any amount of slope in a rigidly rectilinear structure. They also argued that Mies used off-the-shelf extrusions, and a sloped stop would have to be custom fabricated, a clear violation of his principles. Sexton, with the support of Dean Robertson and Gunny Harboe, prevailed, because they convinced all the interested parties that, first of all, the slope cannot be seen. And secondly, compromising on the custom-design issue was better than specifying a heavy, and thus inappropriate, stock stop.

THE PURISTS REBUTTED THAT IT WOULD BE BLASPHEMOUS TO INTRODUCE ANY SLOPE IN A RIGIDLY RECTILINEAR STRUCTURE.

Clune enlisted specialty-glazing contractor Harmon to handle the field work and endure the closest scrutiny. According to Harmon, the facade consists of more than 800 steel stops held in place by more than 6,250 screws, and each screw was countersunk to protect the ever-so-slightly beveled profile. Tenuta marvels at the scrutiny. They had to be submitted for approval, were rejected, remade, and resubmitted. Even the depth of the countersink was debated, until a tolerance of a mere 1/64 inch was agreed upon.

The 120 lower lites were replaced with a clear tempered glass from Viracon, and the inner face was sandblasted to recreate the exact same effect as the original. The Miesian scholars were in agreement with this solution. However, Sexton knew that unless the sandblasted side was treated, the school would face the same staining and scratching problems it did before. Fortunately, technology eliminated many con-

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cerns. Computer-controlled manufacturing allows glass to be both tempered and sandblasted, and as proved here, to be protected by the application of three layers of ultra-clear epoxy, which has no reflectivity, will not change character, and will never yellow.

Finally, there was the issue of the paint. The sharp "Mies black" had faded to a dull gray. The original paint could not be used again, because it was lead-based. Product research led the architects to Tnemec, an industrial paint and coatings manufacturer known for products of extreme durability. The three coats that were applied should last about 25 years.

Studying Krueck & Sexton's restoration and renovation of Crown Hall reveals more about Mies's design methodology than a slide-show lecture in architecture school ever could. Its work also makes a convincing argument for balancing preservation of original intent with current needs. The great Modernist buildings of the 20th century were meant to have long, working lives. Modifications to Crown Hall will be necessary again in another 50 years. As evidenced by SOM's restoration of Lever House in New York in 2002 and Polshek and Partners' careful restoration of Louis Kahn's Yale Art Gallery in New Haven, currently under way, intimate intervention of Modernist icons might be the only authentic way to know them. ■

S.R. Crown Hall is returned to its original glory. Krueck & Sexton Architects and Clune Construction searched until they found a manufacturer to recreate the "Miesian black" that delineates the structure's exoskeleton in stark contrast to the rest of the campus.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- Read the article "The Perils of Restoring 'Less Is More'" using the learning objectives provided.
- Complete the questions below, then fill in your answers (page 226).
- Fill out and submit the AIA/CES education reporting form (page 226) or download the form at www.archrecord.com to receive one AIA learning unit.

QUESTIONS

1. The restoration phase of S.R. Crown Hall that was completed during the summer of 2005 included all except which?
- **a.** adding bathrooms
- **b.** removal of lead-based paint
- **c.** replacing glass panels
- **d.** retrofitting blinds

2. Crown Hall was designed by whom?
- **a.** Dirk Lohan, the grandson of Mies van der Rohe
- **b.** Krueck & Sexton, alumni of IIT
- **c.** Donna Robertson, dean of the architecture school at IIT
- **d.** Ludwig Mies van der Rohe

3. Both the demolition and construction were able to be completed in only 15 weeks because of which?
- **a.** new materials were prefabricated
- **b.** the scheduling included a contingency plan
- **c.** there was a constantly roving punch list
- **d.** all of the factors listed above

4. Which was the major drawback of the upper glass panels?
- **a.** they were crystal clear
- **b.** they appeared to be barely there
- **c.** they were thin and large
- **d.** they poured daylight into the studio

5. Which was the major drawback of the lower glass panels?
- **a.** they were a matte finish
- **b.** they absorbed oil and adhesive
- **c.** they provided privacy for the students
- **d.** they kept the public from being able to see in

6. Why were the clear upper glass panels not replaced with the ⅜-inch tempered glass panels?
- **a.** that would not meet code requirements
- **b.** they would have a green tint
- **c.** they would have a waviness
- **d.** they would be too heavy for the stops

7. The lower glass panels were replaced with which?
- **a.** mylar-coated glass panels
- **b.** sandblasted panels like the originals
- **c.** tempered glass panels
- **d.** tempered, sandblasted, and clear epoxy protected glass panels

8. The paint was immediately sandblasted off the steel members for what reason?
- **a.** to give it a textured look
- **b.** to make it look blacker
- **c.** to remove lead-based paint
- **d.** to make a smooth finish for new coats of paint

9. The argument against using sloped stops was which?
- **a.** the stops needed to match the original ones exactly
- **b.** a thicker stop, even if it were just a fraction of an inch, would make the frames look heavier
- **c.** no amount of slope should be introduced into a design that is consciously rectilinear
- **d.** sloped stops could not be fabricated

10. Mies van der Rohe's design concept for Crown Hall included all of the following except for which?
- **a.** an open universal space
- **b.** upper walls that were barely there
- **c.** a reflective surface on the inside of the glass
- **d.** a pristine Modernist view to the public

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Residential

Creating rooms with a view is the defining principle of these four uniquely sited residences

The houses shown here share the distinction of being on hillsides that offer spectacular views. The Art Studio and Residence sits on the edge of an open and grassy hilltop, overlooking the landscape of northern Connecticut, which displays a patchwork of New England farms. Sited on the side of a promontory of Orcas Island in the San Juan Islands off the coast of Washington State, the Long Residence features a distant vista of the Harney Channel, where green and white ferries ply their route day after day. A tiny sleeping cabin overlooks Lake Simcoe in the countryside above Toronto, where the owners observe geese stopping by in fall on their migration south, and coyotes walking gingerly on the ice in winter. In Pacific Palisades, Hillside House boasts panaramic views of Rustic and Sullivan Canyons in one direction, and Santa Monica Bay on the other. Even with such disparate locations and varied terrain, the importance of view as the organizing principle of design binds these houses together. *Jane F. Kolleeny*

BRIEFS

Going Dutch The Netherlands first amphibious houses, along the Maas dyke, could provide a new prototype for rebuilding projects in New Orleans. The 37 homes have the ability to float with rising water levels up to 16.4 feet above their normal position by sliding along steel posts, which prevent them from drifting. A quarter of the country's land lies below sea level, and expectations of increasing yearly rain have elicited many prototypes and even models and plans for an entire floating town. American journalists and engineers have been frequent visitors to this project in the past few months as the debate continues over hurricane housing solutions.

Recognizing residential redevelopment The winners of the EPA's 2005 National Awards for Smart Growth Achievement were recognized recently at the National Building Museum in Washington, D.C. For overall excellence, the Denver Urban Renewal Authority took the top prize for redeveloping a 27-acre abandoned amusement park into a mixed-use neighborhood. The other awards went to a military-base redevelopment project in Orlando, a shopping-mall redevelopment project in Lakewood, Colorado; a central district plan in Pasadena, California; and the town of Redding, Connecticut, for cleanup and redevelopment of an abandoned wire mill into a mixed-use, transit-oriented neighborhood. (See www.epa. gov/smartgrowth/awards.htm).

Pods may make poor pads The reality of living in a 13.1-by-8.2-foot capsule may be too confining to bear for residents of Tokyo's Nagakin Capsule Tower. The building, completed in 1972, faces either a refurbishment or replacement—with residents making a case for the latter. Architect Kisho Kurokawa designed the pods, which feature built-in beds, bathrooms, and one circular window. Kurokawa gives the building about a 50 percent chance of survival, despite its ability to draw tourists.

Dog Box Though it's more typical to ask, "How much is that doggy in the window?" as opposed to inquiring about the doghouse, a $525 "Dog Box" is outshining its residents. Interns at Frank Harmon Architecture in Raleigh, North Carolina, used recycled materials and green-building techniques to create the house, which sold at North Carolina's Triangle Beagle Auction. The roof collects rainwater and provides an attractive surface for planting. For interior creature comfort, a photovoltaic solar panel provides electricity to an exhaust fan inside, while a window admits daylight. *Sarah Cox*

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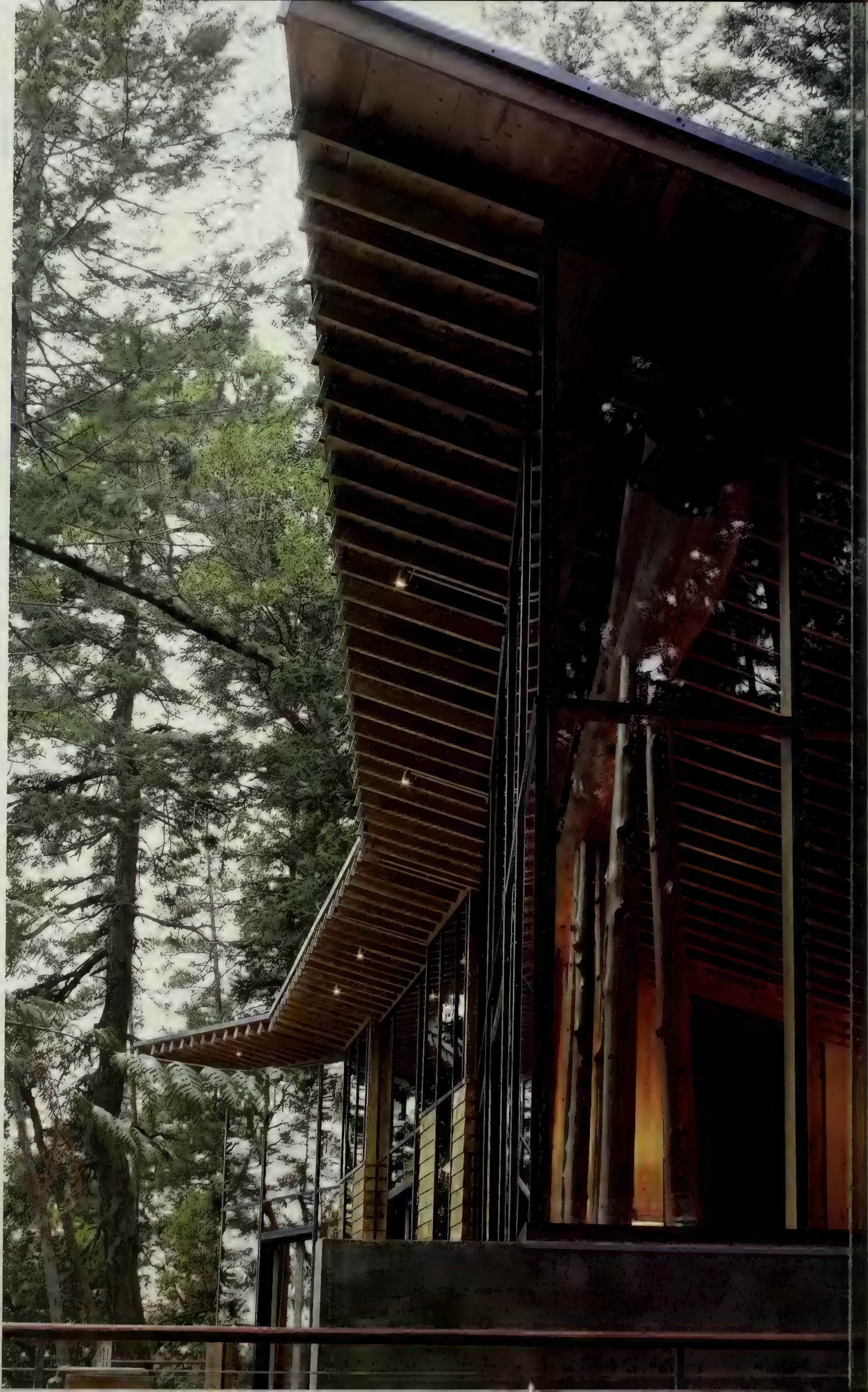
A modern version of the log cabin, the house perches on the side of a hill overlooking the Harney Channel in the San Juan Islands of Washington State. Tripod log assemblies and beams, prebuilt off-site, provide both structural support and aesthetic interest. A glazed front wall opens all the spaces of the house to the view.



The elegant **Long Residence** embodies Cutler Anderson Architects' interpretation of a log cabin

By Victoria Medgyesi

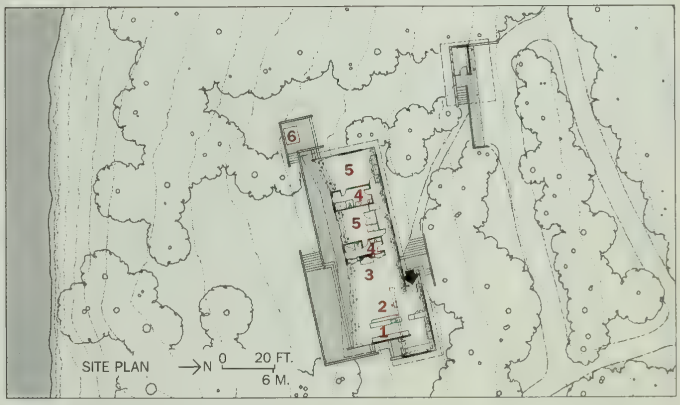
If architect James Cutler, FAIA, had his way, Orcas Island would be nothing but blue and green—at least as seen from the air. Cruising by helicopter over one of the most serene spots in the Pacific Northwest's San Juan Island chain, he managed to get his message across despite the ear-splitting noise. "Look," he shouted, as we passed over a recently completed project. "Isn't that great? You can barely see the place at all."

Honoring geographic conditions, responding to the integrity of natural materials, and staying true to a romantic vision have long formed the philosophic backbone of Cutler Anderson Architects. The firm's ability to translate that philosophy into sophisticated expressions of individuality was what brought one couple to Cutler's door.

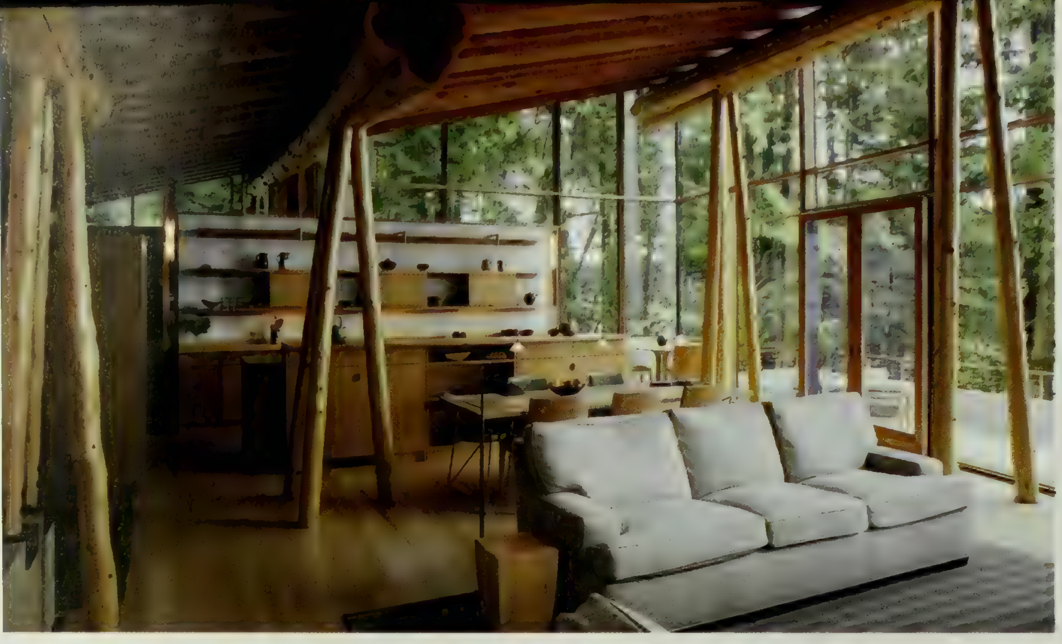
Their site was steep but buildable, lush with second-growth forest, and in possession of a sweeping view that overlooked a wide saltwater channel and nearby Shaw Island. Just as fortuitous, says Cutler, was the couple's playful, experimental streak, which he shares. It was this set of particulars and the relatively simple programmatic desires of the client—a serious kitchen, truly private spaces, room for family gatherings—that shaped the design of the vacation retreat.

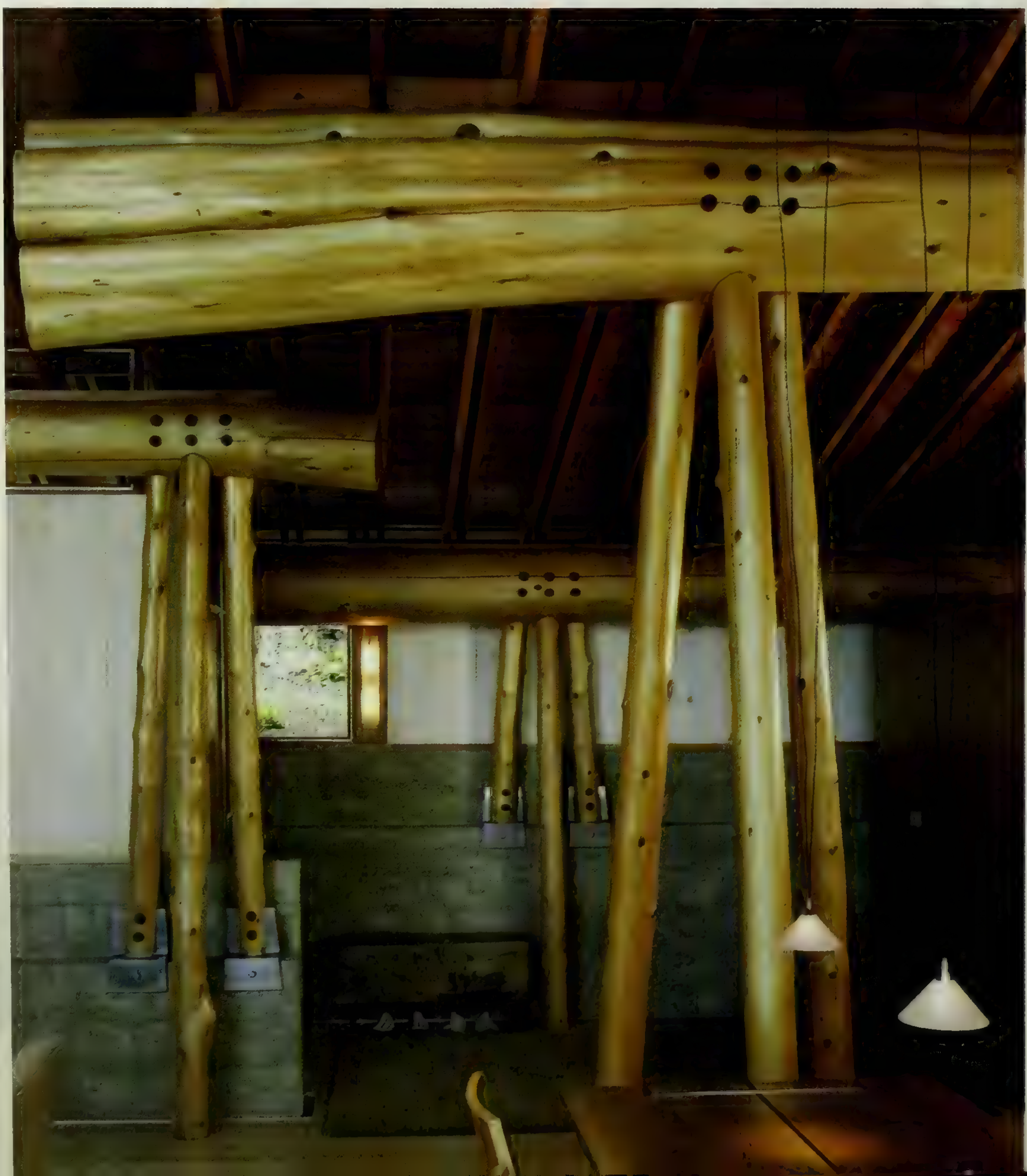
Writer Victoria Medgyesi lives in Seattle.

Project: *Long Residence, Orcas Island, Washington*
Architect: *Cutler Anderson Architects—Jim Cutler FAIA, Julie Montgomery, AIA, Chad Harding*
Engineer: *Coffman Engineers*
Consultants: *Doug Rasar Interiors (interior designer); Robert Trachtenberg (landscape architect); Eastsound (landscape installation)*
General contractor: *Alford Homes*

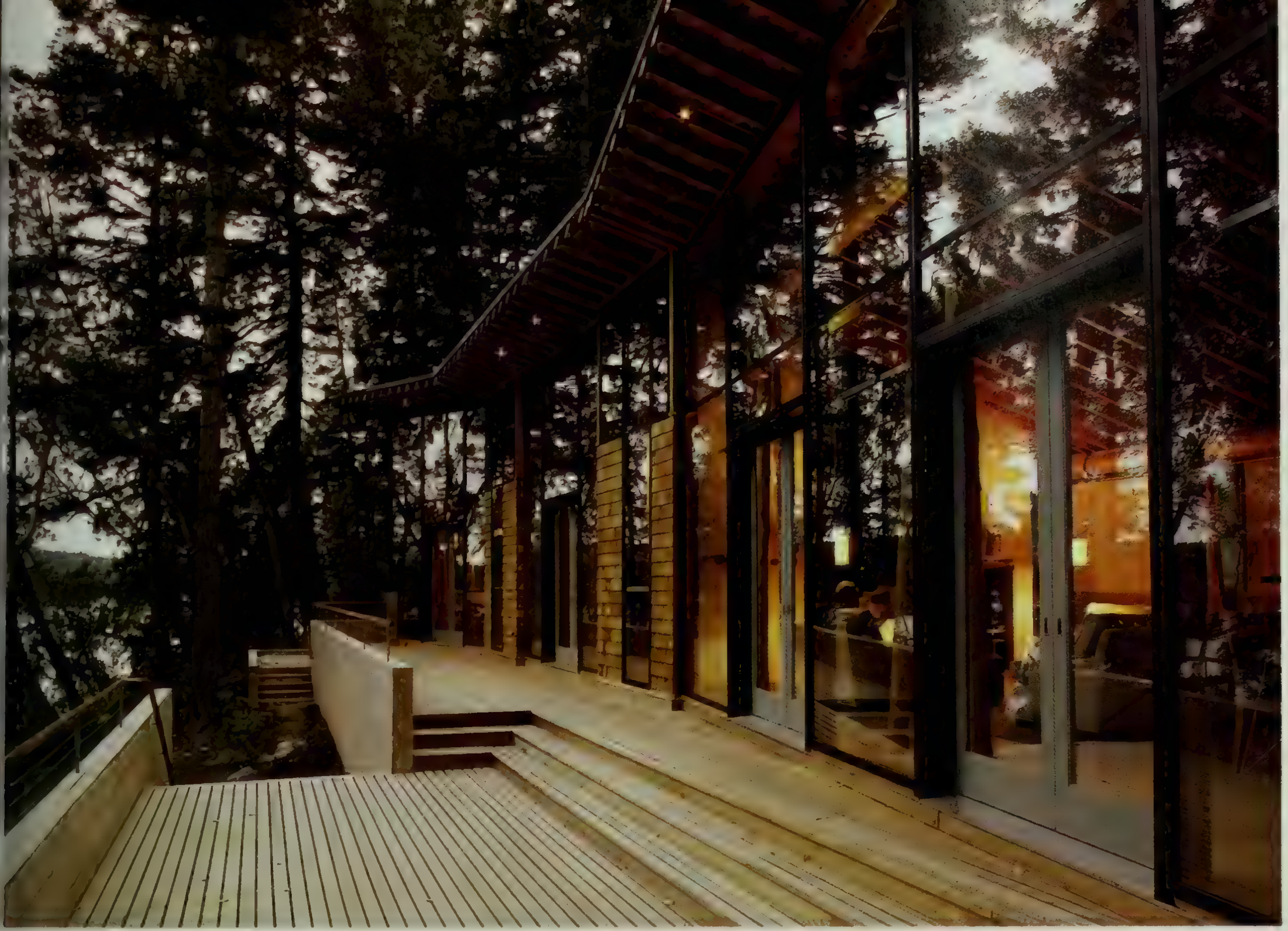


1. *Kitchen*
2. *Dining room*
3. *Living room*
4. *Bath*
5. *Bedroom*
6. *Hot tub*





A deck, supported by a concrete retaining wall, runs the length of the house on the open, windowed side (opposite). The interiors continue the celebration of wood, where western red cedar logs (hoisted onto tripods) reveal their skeletal form, and rafters fit to the top of the log structures (this page). A metal roof tops the entire ensemble (below and opposite).



Responding to the steep, wooded site, Cutler supported the house on 18 sets of peeled-wood tripods engineered to provide enough ateral stability to dispense with conventional shear elements. The tripods were attached to western red cedar log beams by concealed steel plates and bolts. Each was then visually punched through the floor and extended down to a steel connection at the footing. A system of rafters graduated in size relative to span resists the pull of gravity.

Cutler wrapped the building's system of wooden bones in an exterior skin of glass, aluminum, and cedar shingle. He then topped the shell with a layer of two-by-six spacers that support a large overhanging metal roof and create an insulated cavity below it. Given the clients' emphasis on privacy, the shed roof serves to visually insulate the structure from the road above.

LIKE GOLDSWORTHY'S SCULPTURE, CUTLER'S WORK MAKES A STRONG STATEMENT ABOUT NATURE AND STRUCTURE.

Each room in the 2,035-square-foot house opens to the expansive cedar terrace through a set of 8-by-6-foot, custom sliding doors, providing multifaceted views to all the interior spaces. A corridor running the full length of the uphill side of the house provides access to all of the rooms—the main living area, bedroom suite, guest room, and two full baths.

Visitors to the house get their first peek of the building's distinctive wood tripods through low-to-the-ground windows along the uphill entry side. The structural elements reach their full 15-foot-high glory along the glass curtain wall facing the view. As was Cutler's intention, the tripods refer to the trees on the other side of the glass—an idea inspired by Scottish sculptor Andy Goldsworthy's installations involving fallen trees.

Cutler credits his contractor, Lowell Alford, for executing an unorthodox design that combines sophisticated engineering with ancient materials. Alford even harvested the logs from land owned by his father and hired a team of high school students to peel the logs prior to off-site assembly.

Like Goldsworthy's sculpture, Cutler's work makes a strong statement about nature and structure. It's a soft/hard balance echoed in the muted beech-wood floors, the whitewashed pine walls, and the clean lines of the custom wood furniture and cabinetry, much of which was designed by Cutler himself. ■

Sources

Metal roofing: *Taylor Metal Products*

Upholstery: *National Furniture Company*

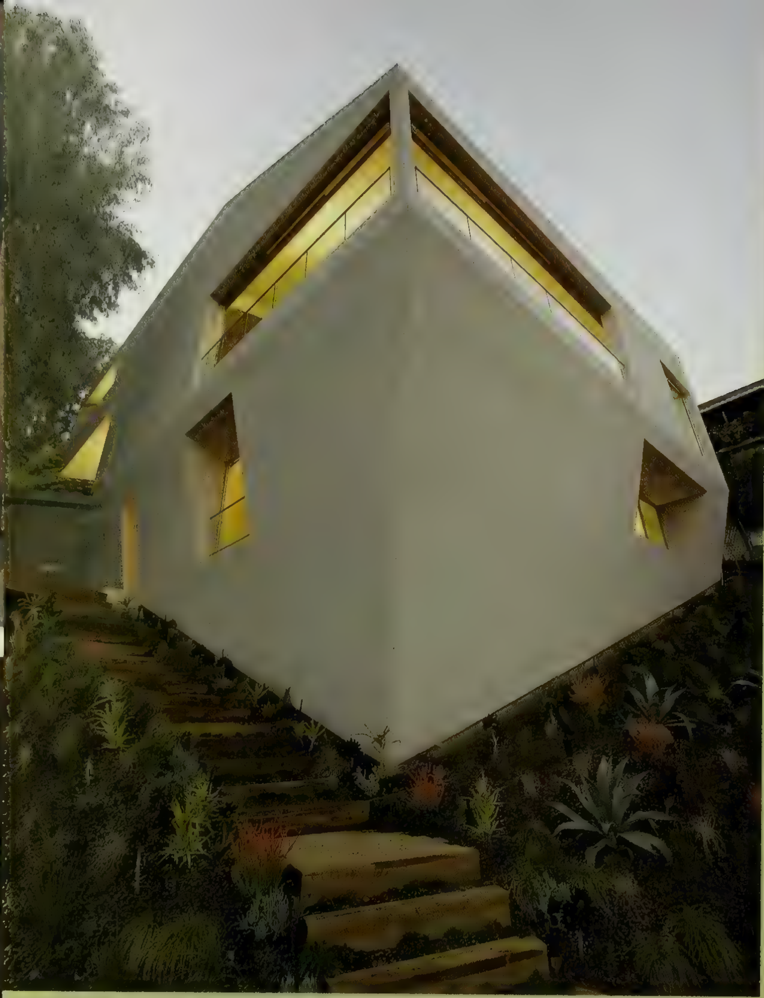
Lighting: *Tech Lighting; Venzia Light Fixtures*

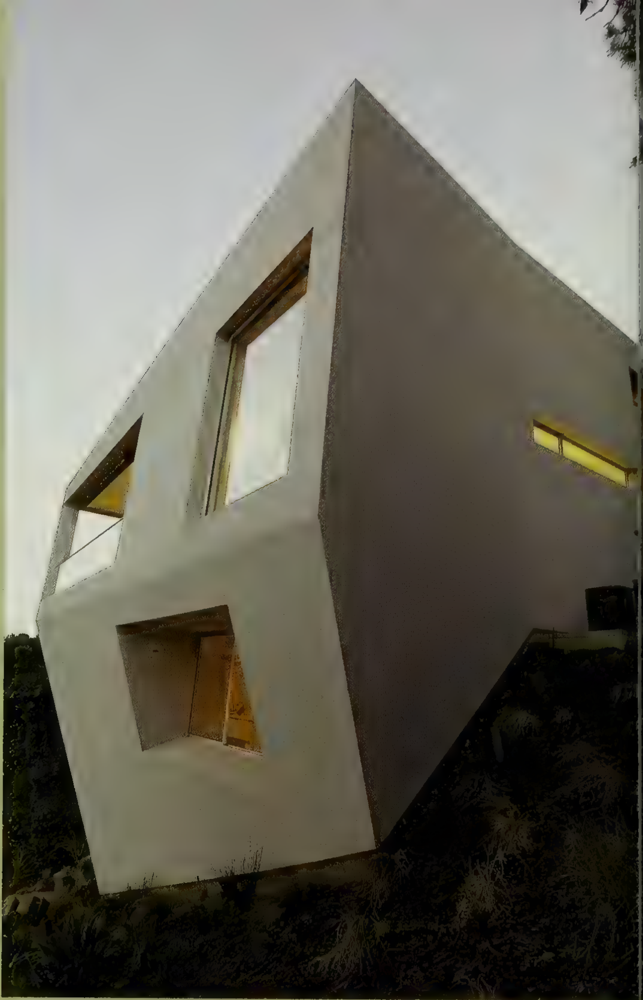
Windows and window walls: *Custom-designed by Jim Cutler*

Sliding doors: *Custom-designed by Alford Homes*

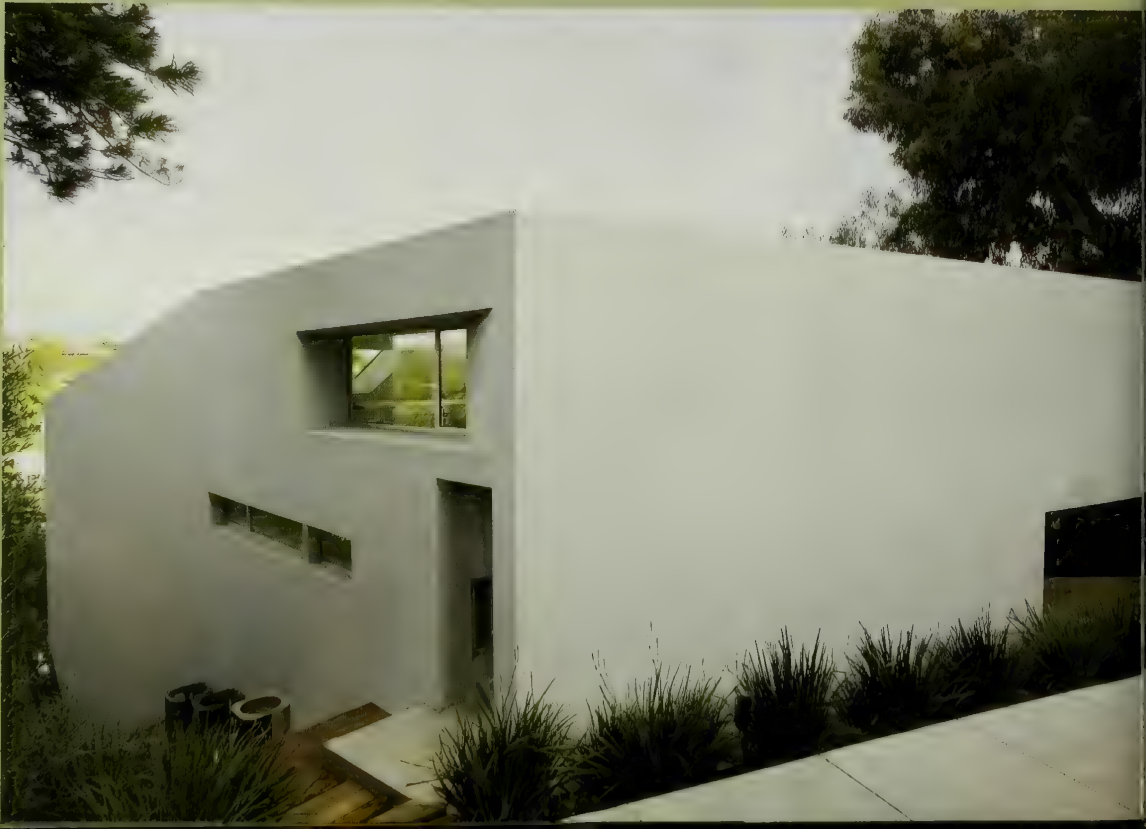
Cabinets and woodwork: *Custom-designed by Cutler Anderson Architects*

For more information on this project, go to Residential at **www.archrecord.com**.

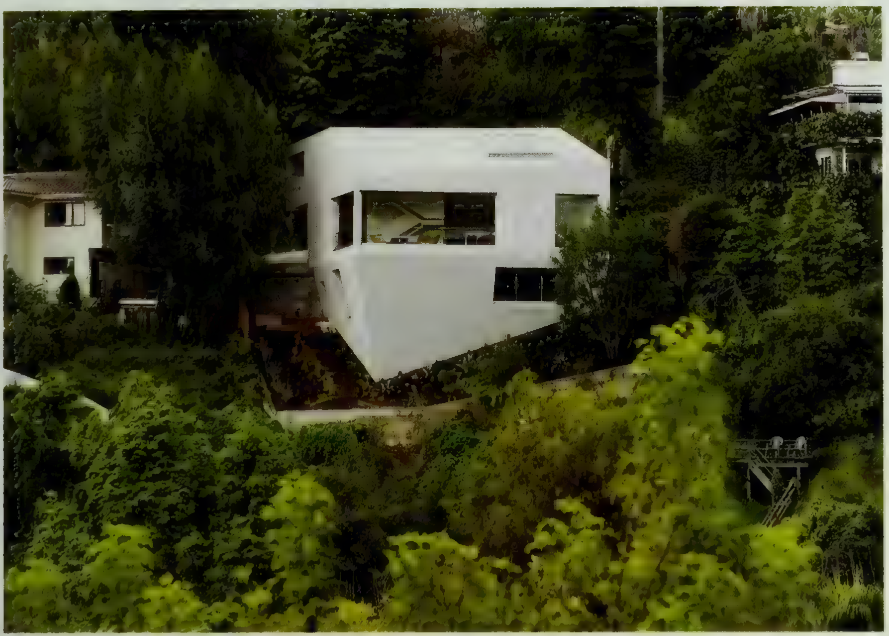




The house perches on an uneven downhill slope, affording dramatic views of the Santa Monica Canyon. Three levels are stacked within the concrete volume, colored an iridescent lavender, which changes with the light. The architect says the color was derived from that of the eucalyptus trees prevalent on the site.



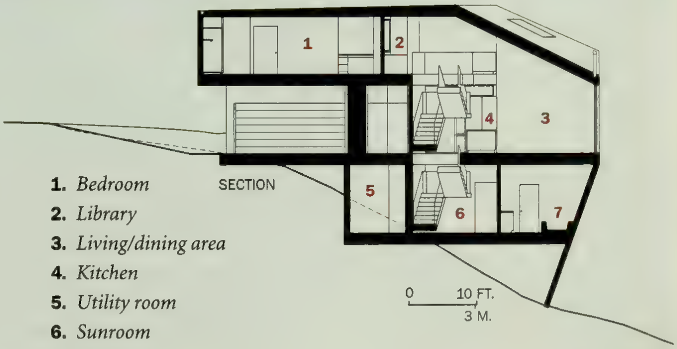
Johnston Marklee's **Hill House** perches on a precipitous site like a faceted diamond



By Michael Webb

Some of the best wine is made from vines that have to struggle for a foothold on steep slopes, and the same is true for residential architecture in Los Angeles. Starting with Wright, Schindler, and Neutra in the 1920s, architects have developed inventive solutions for precipitous sites in Silver Lake, the Hollywood Hills, and west to Malibu. Few undeveloped plots remain, and the partnership of Sharon Johnston and Mark Lee was challenged to build a spacious spec house on a small and irregular plot of land that drops unevenly from a busy street to command a panoramic view over Santa Monica Canyon. The local Hillside Ordinance limits height (48 feet from the lowest point) and bulk in an effort to preserve the rustic character of the canyon. An earlier, failed attempt to build on the site would have required 23 caissons to meet the city's stringent seismic code.

The architects turned these constraints to advantage by tapering their three-level block at the top and bottom. This allowed them to minimize the footprint, reduce the number of costly caissons to nine, and free up space for a backyard, while maximizing the volume within the zoning envelope. The form emerged as a response to the site and regulations, and the architects massaged it in physical models and with Form Z software until they had sculpted a 3,600-square-foot interior. In contrast to other attempts to max out the site, the Hill House seems to grow organically from the slope, much like John Lautner's celebrated Chemosphere House. Its chamfered elegance also recalls the massing diagrams for New York skyscrapers that Hugh Ferris transformed into works of art.

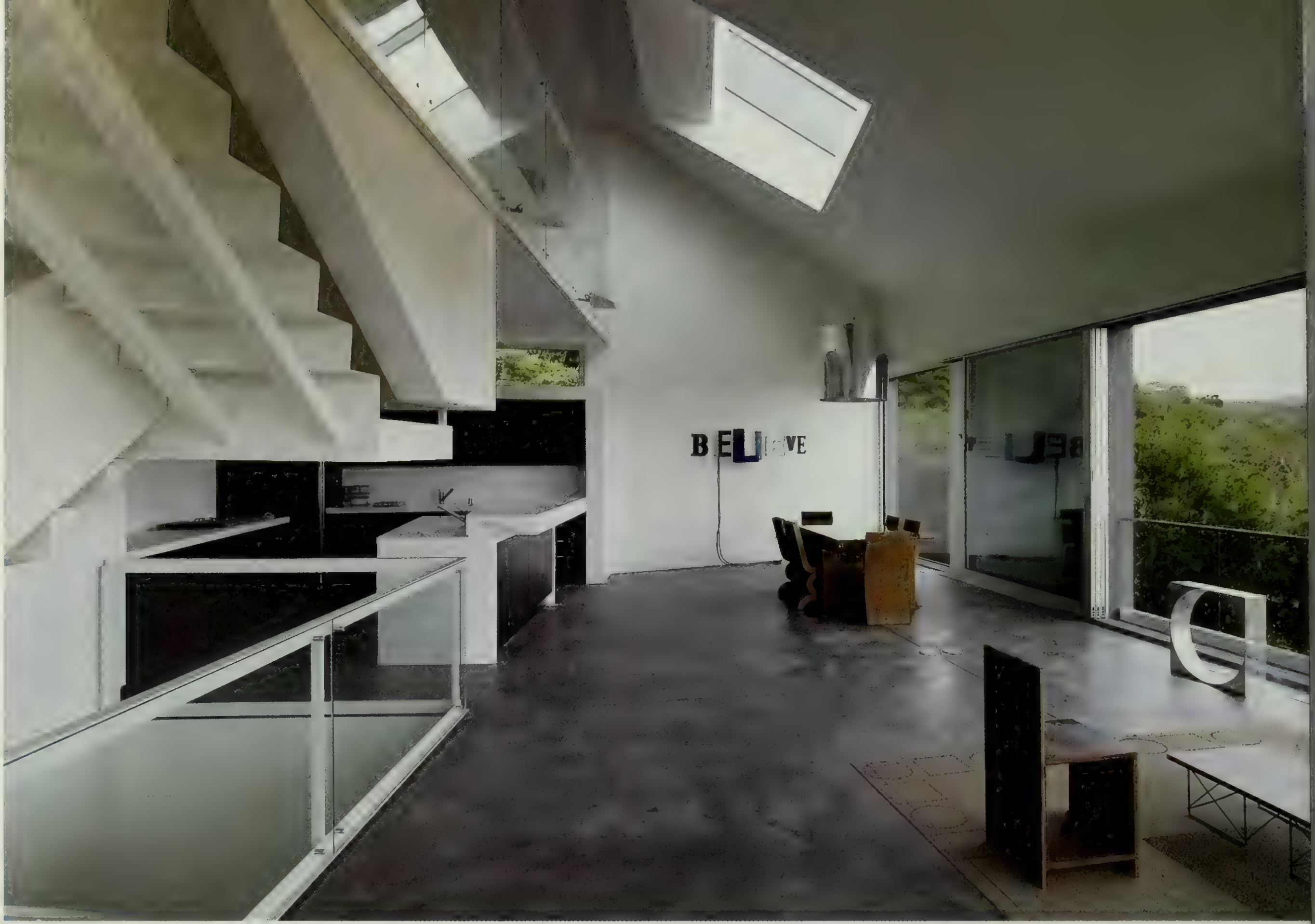


1. *Bedroom*
2. *Library*
3. *Living/dining area*
4. *Kitchen*
5. *Utility room*
6. *Sunroom*
7. *Master bath*

The design and permitting process stretched over 18 months, at a time when the two partners were completing the Sale House—a modest cluster of gray cubes on a flat site in Venice, California. When the

Project: *Hill House, Pacific Palisades, California*
Architect: *Johnston Marklee & Associates—Mark Lee, principal in charge; Sharon Johnston, AIA, Jeff Adams, Mark Rea Baker, project architects*
Engineers: *William Koh & Associates (structural); CC & R (civil); Jim Sadler (glass)*
Consultants: *Lush Life LA (landscape); Dan Wienreber (lighting); Jack Pierson (artist/color)*
General contractor: *Hinerfeld-Ward*

Michael Webb is the author of many books on architecture and design, most recently Art/Invention/House *and* Adventurous Wine Architecture. *He lives in a Richard Neutra hillside apartment near UCLA.*



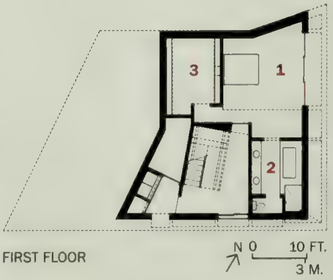
The dramatic space of the living/dining room floor opens to views on one side. On the other side, a central steel staircase provides access to the home's three levels.

client had second thoughts and put the plot and plans up for sale, the architects persuaded family friends to become investors so they could carry the project to completion. Two years later, the house was done, and the architects quickly found a buyer in Chan Luu, a Vietnamese-American who designs cutting-edge jewelry and clothes. The shape reminded her of a faceted diamond, and she found the interior to be an ideal fit.

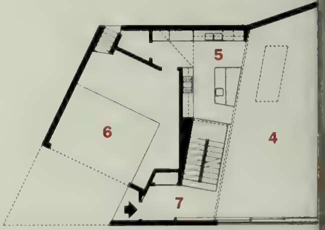
The two outer walls of the poured-concrete base are tilted perpendicular to the 47-degree slope, working in compression with the inner retaining walls, while tie beams within a concrete deck anchor the house at the top of the slope. A faceted steel cage encloses the mezzanine, with the bedroom cantilevered over the garage at street level. This structural frame is concealed by a layer of a waterproof and elastic polymer-based mix that was troweled onto a substrate of ¾-inch plywood, creating a seamless skin that unites the angled planes. The textured envelope catches the light and conceals minor imperfections, while its pale lavender hue echoes the color of the neighboring eucalyptus trees.

THIS IS A LITTLE HOUSE THAT THINKS BIG WITHOUT OVERWHELMING ITS NEIGHBORS.

The house abuts a street that cascades down, past a well-hidden

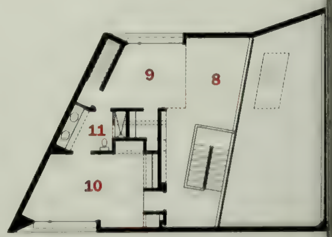


FIRST FLOOR



SECOND FLOOR

1. *Master bedroom*
2. *Master bath*
3. *Master closet*
4. *Living/dining area*
5. *Kitchen*
6. *Garage*
7. *Entry*
8. *Library*
9. *Study*
10. *Bedroom*
11. *Bath*



THIRD FLOOR

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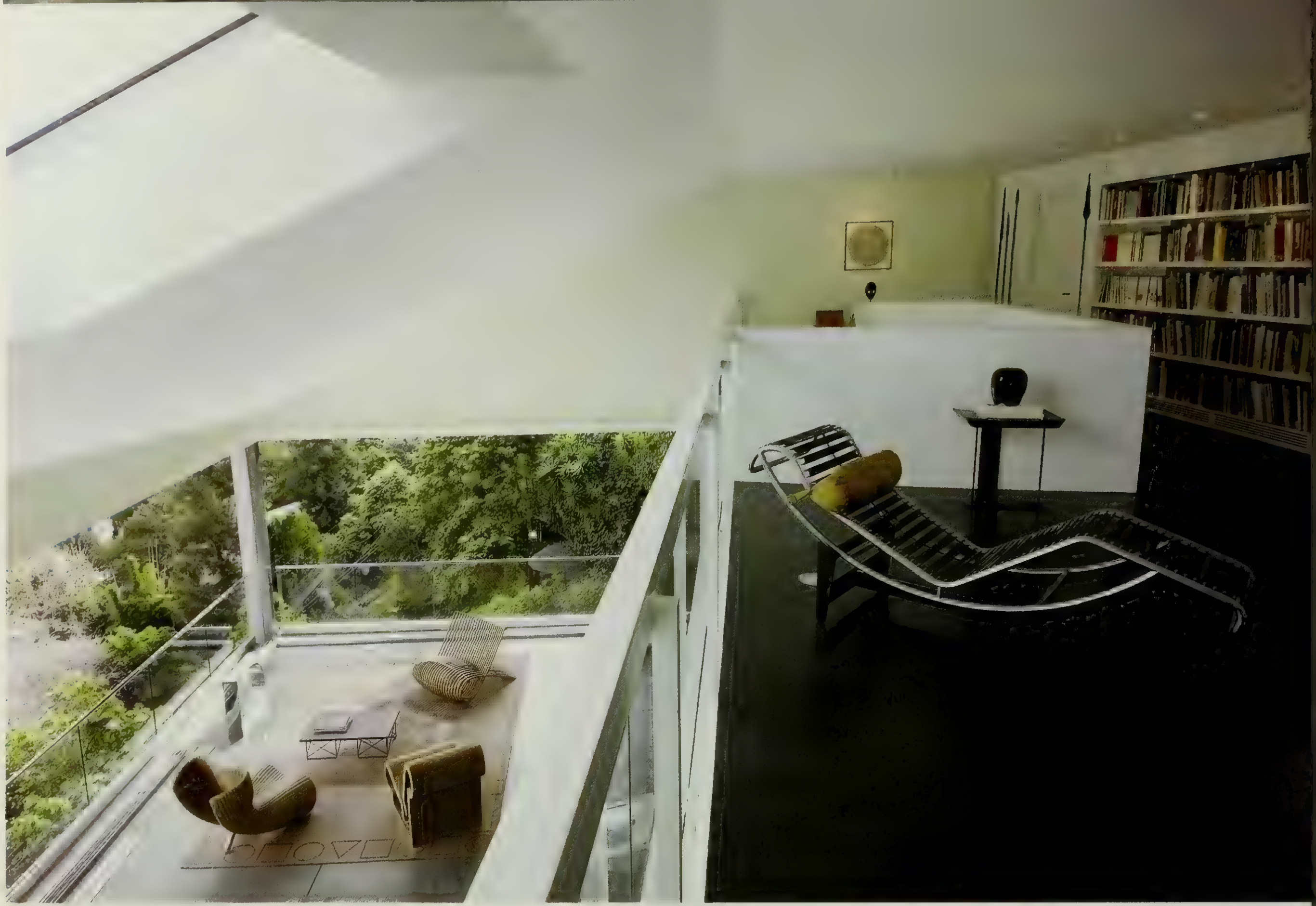

The shifting angles and tilted planes of the radiant, light-filled interior convey an expansiveness that belies the modest size of the spaces (this page and opposite). A mezzanine overlooks the living-room area (above).

Eames House and to the Pacific Coast Highway. An enigmatically blank facade, broken only by a single recessed slot above the garage, baffles noise from the street and assures privacy. The white, light-filled interior offers a dramatic contrast. Stairs link the master suite on the lowest level in the base to the living-dining area and kitchen, which are tucked below the library off a mezzanine gallery.

The ceiling slopes sharply down and the mezzanine is slightly rotated to force the perspective. A folded steel staircase with high parapets and deep-set window openings framing treetops add to the drama. Spaces flow easily into each other and out through pocketing glass sliders that open up two sides of the living area to the wooded canyon.

The interior spaces have an expansiveness and energy that belies their modest dimensions. This is a little house that thinks big without overwhelming its neighbors. ■

Sources

Roofing/exterior cladding: *Grailcoat*
Windows: *Fleetwood (aluminum); R & C Glass (glazing)*
Skylights: *Sun Valley Skylights*
Lighting: *Lightolier; Liton; Alkco*
Plumbing: *Dornbracht; KWC; Duravit; Corian*
Tile: *Dal Tile*

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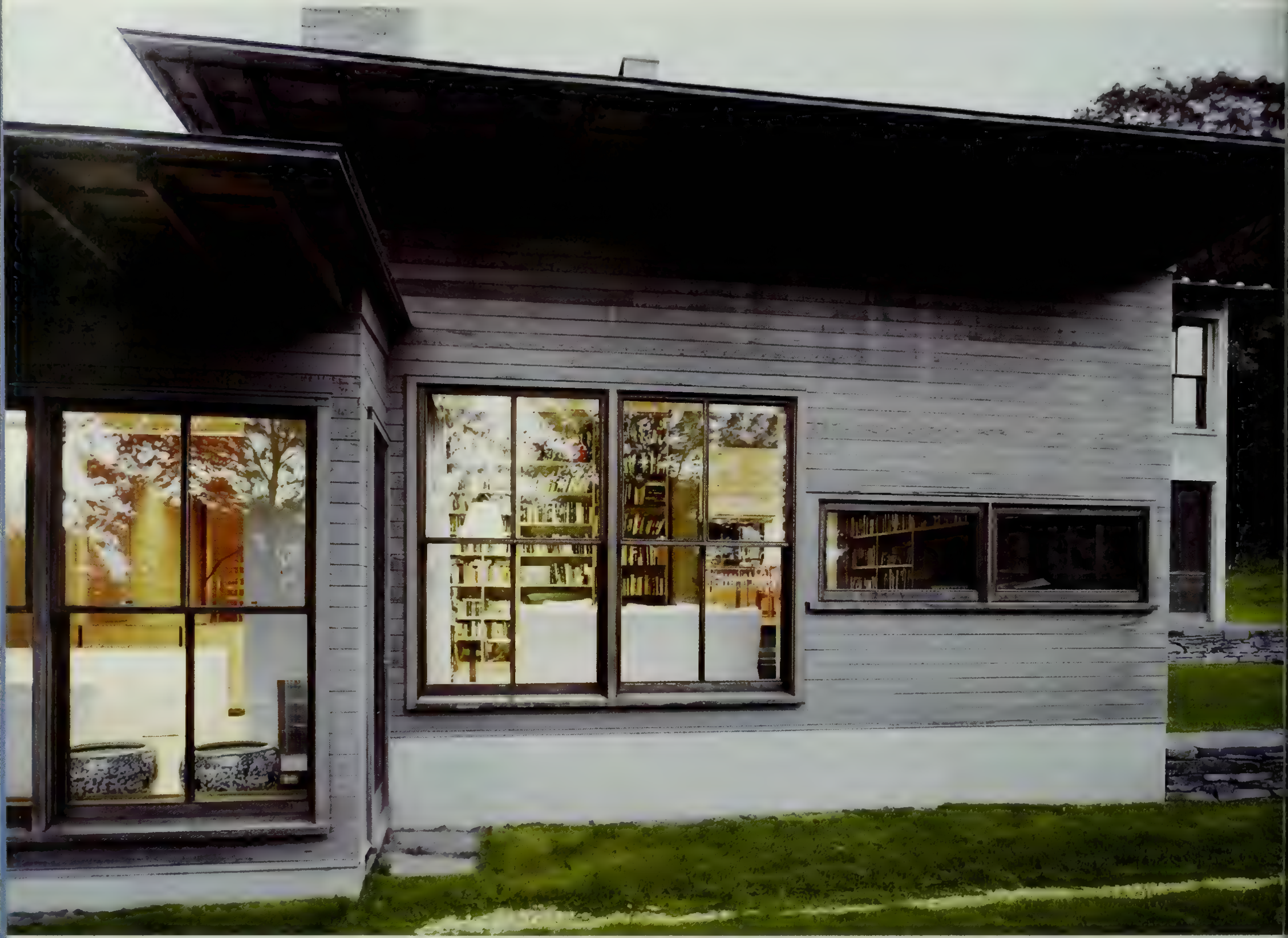
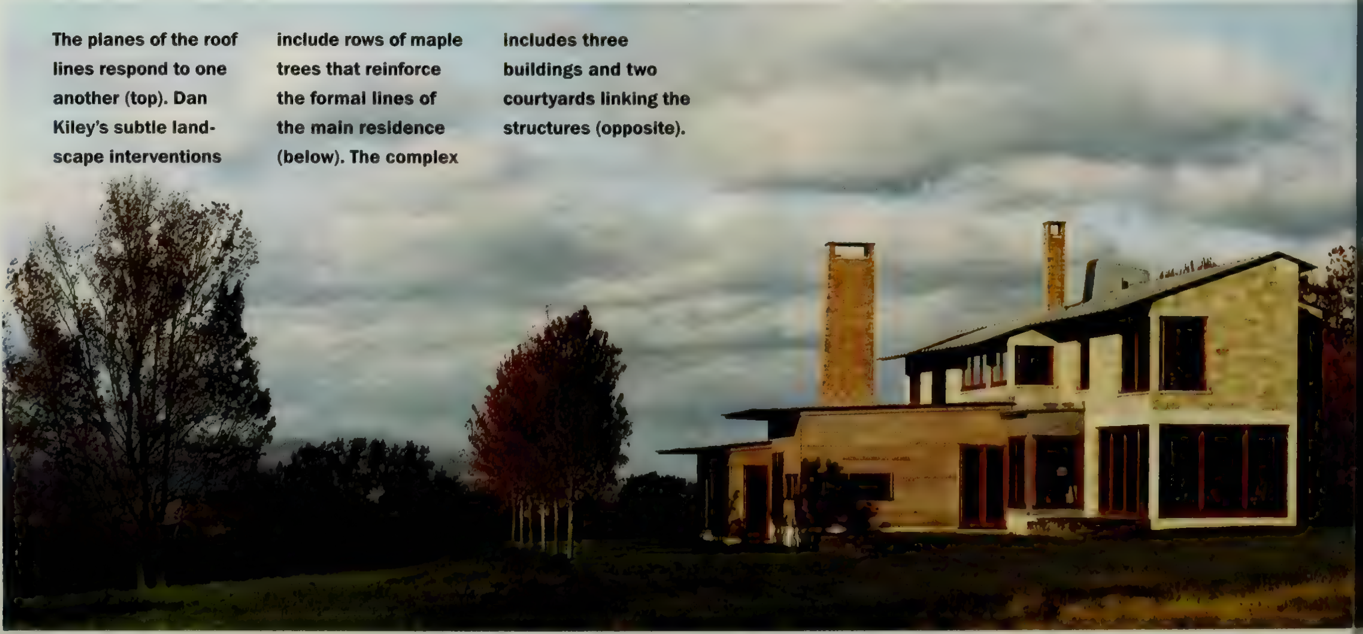


The planes of the roof lines respond to one another (top). Dan Kiley's subtle landscape interventions include rows of maple trees that reinforce the formal lines of the main residence (below). The complex includes three buildings and two courtyards linking the structures (opposite).



Nature and the man-made join harmoniously at Peter Rose's **Art Studio and Residence**

By Jane F. Kolleeny

The pace is slow in Sharon, Connecticut, a picturesque village in Litchfield County, located in the northwest corner of the state. Reminders of the area's colonial past are evident in the covered bridges and mossy stone walls abundant there. Weathercock Farm, among the many old farms that dot the landscape, consists of a 100-acre tract of land with barns formerly used for livestock. Purchased by a couple and their teenage daughter in the late 1990s, the farm itself was easily revived with 100 Angus cattle, but the site lacked proper accommodations for the new homeowners.

The owners started work on their home by hiring Cambridge, Massachusetts, architect Peter Rose, AIA. While they began the design process with visions of white clapboard on the exterior, a material common in the residential architecture of New England, they ended up with concrete block, a choice that both surprised and delighted them.

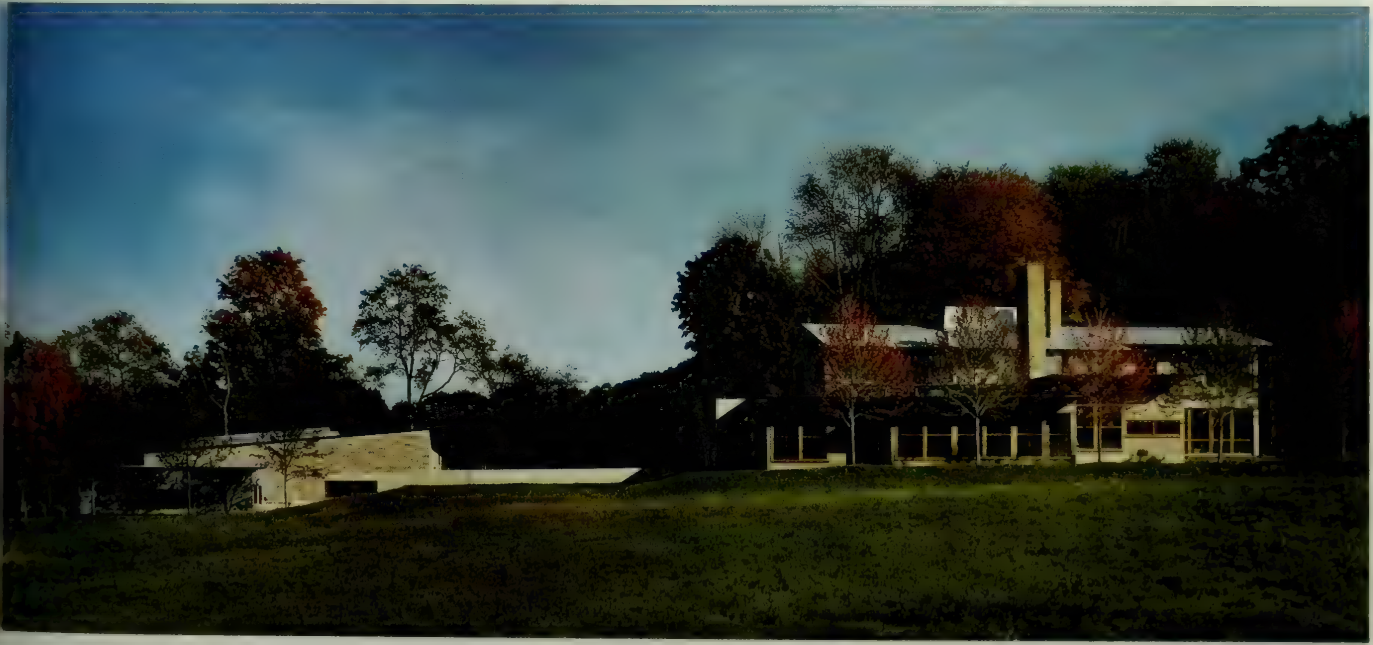
"Most homeowners think they know what they want and then go about the task of pursuing an outcome," said Rose. "In this case, the owner put conventional thinking aside and engaged in a process with me, founded on the belief that 'not knowing' is the best place to begin, and white clapboard simply did not evolve as the material of choice."

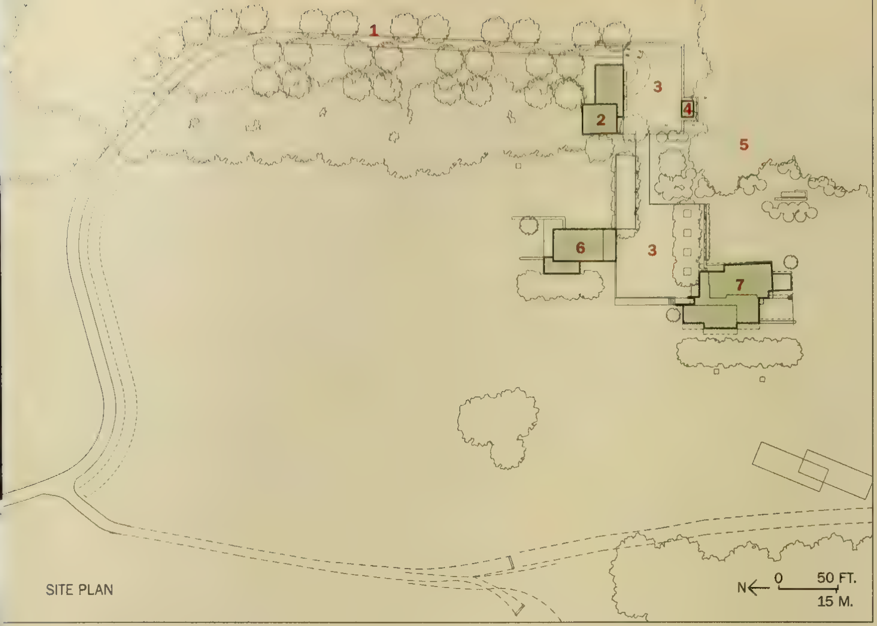
Instead, a three-building compound emerged, consisting of a main house, an artist's studio, and garage/guest quarters. As visitors turn onto the the property's dirt road, they are greeted by the red barns of the farm and the wary gaze of the cattle. The road meanders up a hill, where a sequence of subtle gestures—a woodpile, a stone wall, a gravel drive—signal domesticity. Approaching from behind the buildings into one of two courtyards, visitors first see the garage/guest suite, then the art studio on the right, and the main house on the left. The ensemble rests comfortably on the edge of a grassy field, sitting back from the crest of a hill, "capturing the views but not getting in their way," as one of the owners observed.

Along with the unexpected use of concrete block, the architect specified a lead-coated cooper roof, tongue-in-groove stained cedar siding, and two brick chimneys on the main house, all of which help the building blend with the muted hues of the landscape. The art studio and guest quarters pick up the theme. Visually, the group of buildings are so thoroughly rooted in the environment that they seem defined from without, rather than from within.

The main house is sliced in half longitudinally with a hallway that reaches from one end to the other, defining a border between the public one-story areas that open to views on the west, and the private two-story program behind. The living room, library, and office face westerly views, while the kitchen, dining, bath, and laundry room compose the back-lying areas of the main floor, with bedroom suites forming the

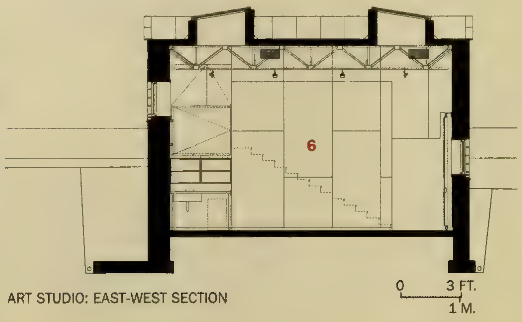
Project: *Art Studio and Residence, Sharon, Connecticut*
Architect: *The Office of Peter Rose*
Consultants: *Arup (engineer); Office of Dan Kiley (landscape)*
General contractor: *Dick Coon Construction*



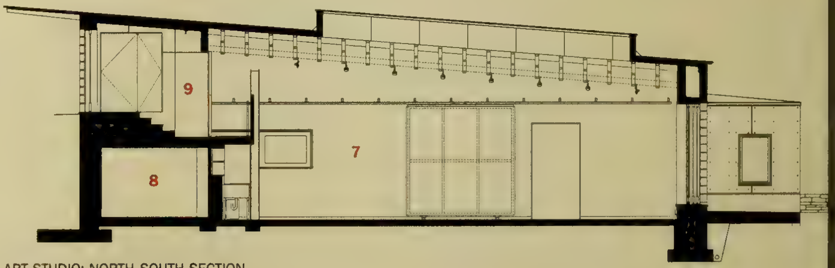


1. *Entry road*
2. *Guest quarters/garage*
3. *Courtyard*
4. *Firewood storage*
5. *Existing stone walls*
6. *Art studio*
7. *Main house*
8. *Storage*
9. *Entry from courtyard*

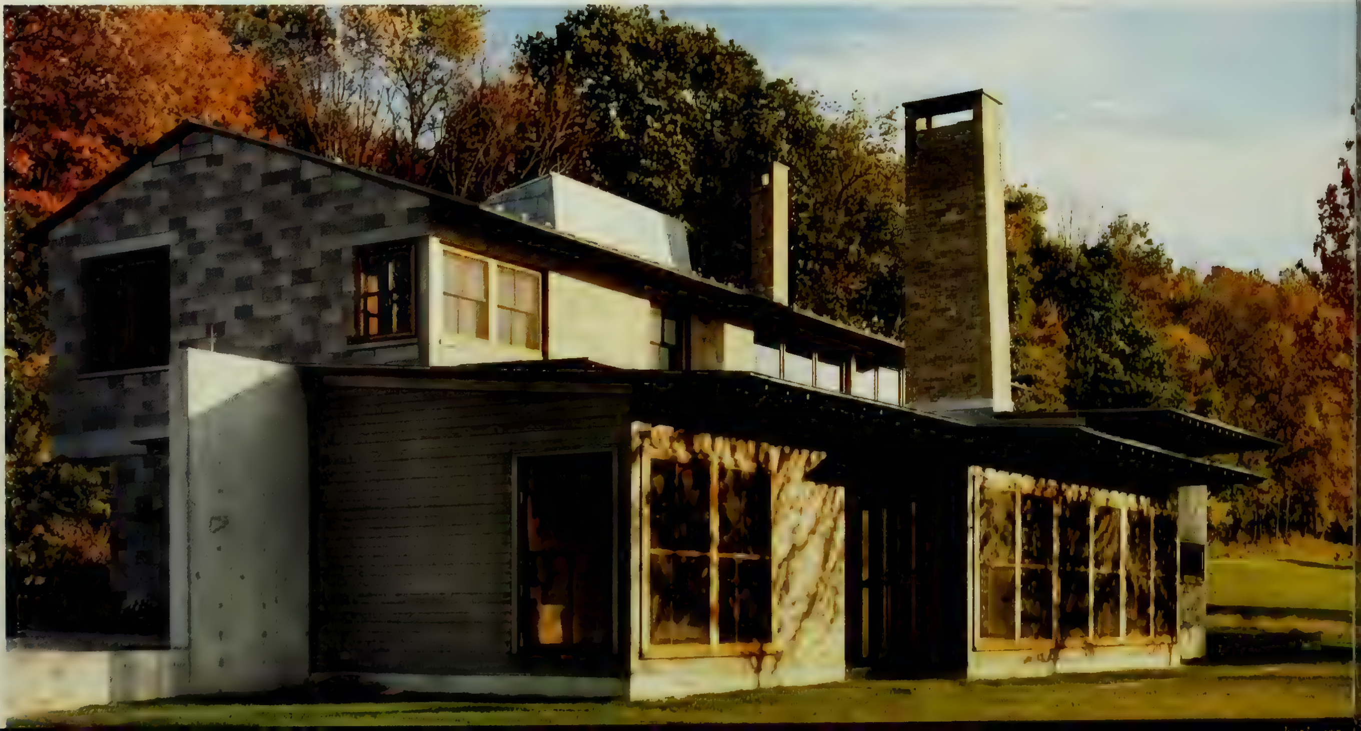
Adjustable built-in shelves in the library are custom-designed in wood and stainless-steel (opposite, top). An end-to-end hallway in the main house delineates public and private spaces (opposite, bottom). The exterior walls of the main house are composed of concrete block and tongue-in-groove cedar siding. The building is topped by two brick chimneys (below).



ART STUDIO: EAST-WEST SECTION



ART STUDIO: NORTH-SOUTH SECTION



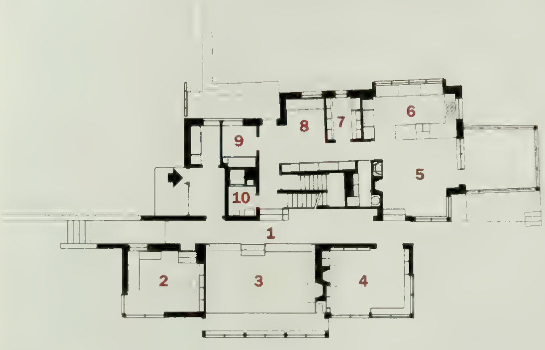
second story, all tucked into the slope of the land. Landscape architect Dan Kiley, with whom Rose frequently collaborated before Kiley's death in 2004, extended and reinforced this formal line of demarcation into the landscape with several rows of maple trees running parallel to it.

Inside, architecture, furniture, and art mix modern and country metaphors in a sensitively arranged composition of color and form. The concrete-block walls of the house are rough-hewn, a quality both architect and owner appreciated. Red cedar wood paneling camouflages a multitude of built-ins, nooks and crannies, and ample storage cabinets for the typical clutter of daily living. Due to the absence of overhead cabinets, light in the kitchen remains unobstructed, with storage below the granite counters.

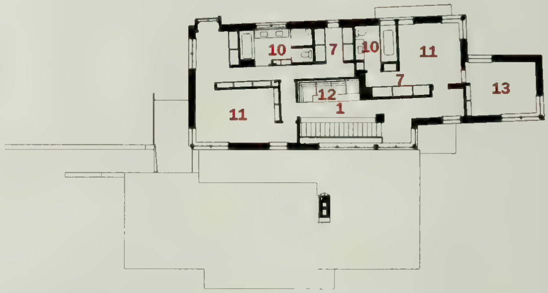
All the windows are framed in mahogany, custom-made by master craftsman William Parry. Three fireplaces with Kasota stone mantles warm up the interiors, and custom hemp rugs of neutral color add an elegant, understated touch. The wife, a painter, has strategically mounted large Modernist paintings in the house, skillfully playing them off the Minimalist design of the architecture.

The art studio features an open work area, offices, and utility spaces. Daylight floods the work space, tumbling from skylights, high window cavities, and floor-to-ceiling windows on the north, which slide into wall openings to create an outdoor gathering area with views of far-

Abundant light from tall windows, skylights, and high window cavities illuminates the work space in the art studio (left). Windows on the north side of the studio open to an outdoor gathering area (bottom). In the main house a screened porch is reached off a dining/sitting room (opposite).



MAIN HOUSE: MAIN FLOOR



MAIN HOUSE: UPPER FLOOR

1. *Hallway*
2. *Office*
3. *Living room*
4. *Library*
5. *Dining/sitting room*
6. *Kitchen*
7. *Storage*
8. *Laundry*
9. *Mudroom*
10. *Bath*
11. *Bedroom*
12. *Reading area*
13. *Study*

off mountains. After working on a painting, the wife can step out onto the porch, where a single fruit tree deftly planted by Kiley provides perspective to the distant views. In the last building of the complex, one finds modest-size guest quarters and a generous three-car garage with roll-up industrial steel doors.

Not immediately evident to the onlooker, order and irregularity combine in interesting ways throughout the buildings. For example, the front of the main house is not symmetrical with the back, which is rotated away, bending to open to views and gain space where needed. In addition, the threshold on the guest house entrance is not parallel to the door, and the walls of some of the structures are not perpendicular to one another. Asymmetry both creates interest and accomplishes certain tasks, such as enlarging a room and opening it up to light. Says Rose, "During my career, I have become interested in misalignment, without it being an error, trusting my instincts to allow things to adjust asymmetrically for some experiential purpose. This introduces a kind of irritant or odd note to a fairly disciplined thing, sliding and rotating volumes with precision and grace."

The total square footage of the ensemble is 10,000, yet the buildings, broken into discrete parts as they are, convey modest dimensions. "The north and south fields would suddenly be measurable and finite if a big lumbering house were sited there," Rose explains. By breaking up the house into pieces, the field remains unified both within itself and with the parts of the complex.

Rose refers to his work as a conversation between the volumes of the house and the landscape. The parts of the whole play a melody: The planes of the rooflines, for example, respond to each other. At the same time, the contrast between concrete and wood will slowly erode from the weather, trees will mature and cover the walls, and walls will become stained. Over time, nature and the man-made will continue the evolution of melding with each other in ways that white clapboard could never have accommodated. ■

Sources

Windows: *William Parry Window Company*

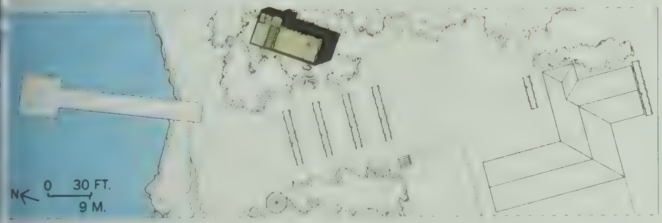
Cabinetmaker: *Menuiserie Mont Royal*

Kitchen floors: *Caswell Flooring*

Cement board: *CemBonit*

For more information on this project, go to Residential at **www.archrecord.com**.

Taylor_Smyth architects' **Sunset Cabin** ages gracefully in its hillside context



By Kelly Rude

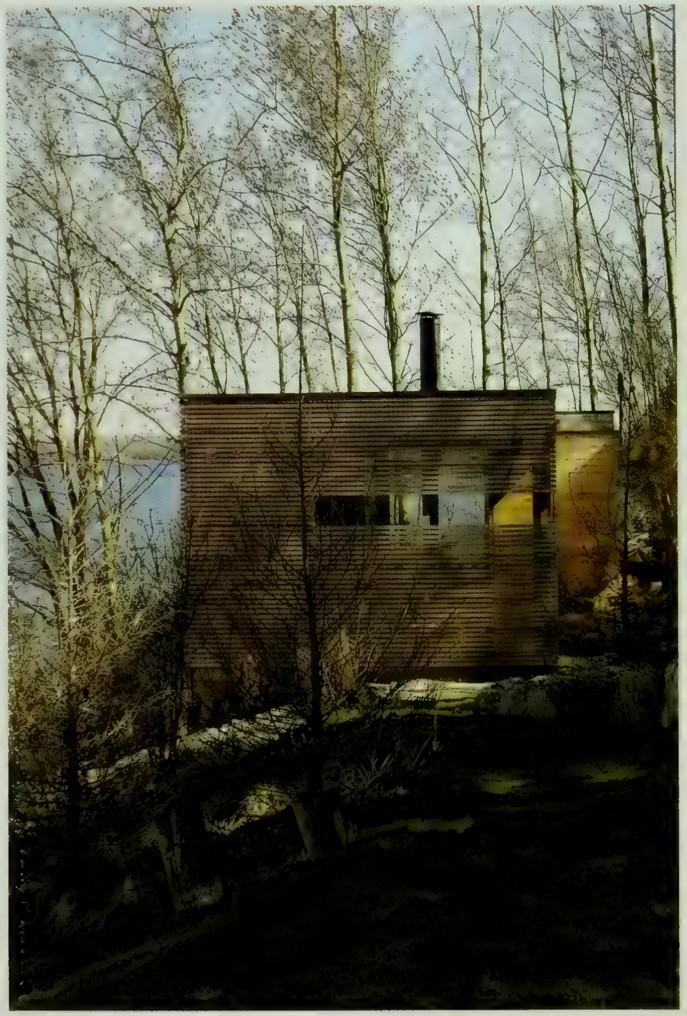
Though three generations of Toronto's well-heeled have had cottages at Lake Simcoe, one hour's drive north of the city, outsiders would never guess the modest cabins were here, never mind occupied. But the rustic and romantic true grit of Toronto's last century of style is still very much alive, at least in this neck of the woods.

"My clients hike and camp when they're here," Toronto architect Michael Taylor explains on the drive up to Sunset Cabin, on an autumn day with maples at their prime, bathed in a light at once crisp and clear, oft and mellow. "It is about the light and the views," says Taylor, as we pproach his clients' main cottage with a west view to the lake.

The cottage owners, a couple, commissioned Taylor_Smyth rchitects to design a private cabin separate but related to the rest of an eclectic mix of sleeping shelters (one is simply a canvas tent stretched on a wood frame) that dot the 1-acre property. The couple, their four adult children, and a steady flow of visitors ensure that the main house and hree sleeping cabins on the property are occupied. While two of the cabns are near the main house, this one is about 150 feet away, perched on a rock on a hillside that gently slopes toward the lake.

"We needed to get away from everyone and have a space of our own," explains the wife. "Because at any one time there could be 10 to 15 people sleeping over." Previously, she and her husband would take refuge in one of the five bedrooms in the main house, which buzzed with energy whenever a crowd showed up for the evening meal. "And the location of the new cabin was our favorite place to sit at sunset."

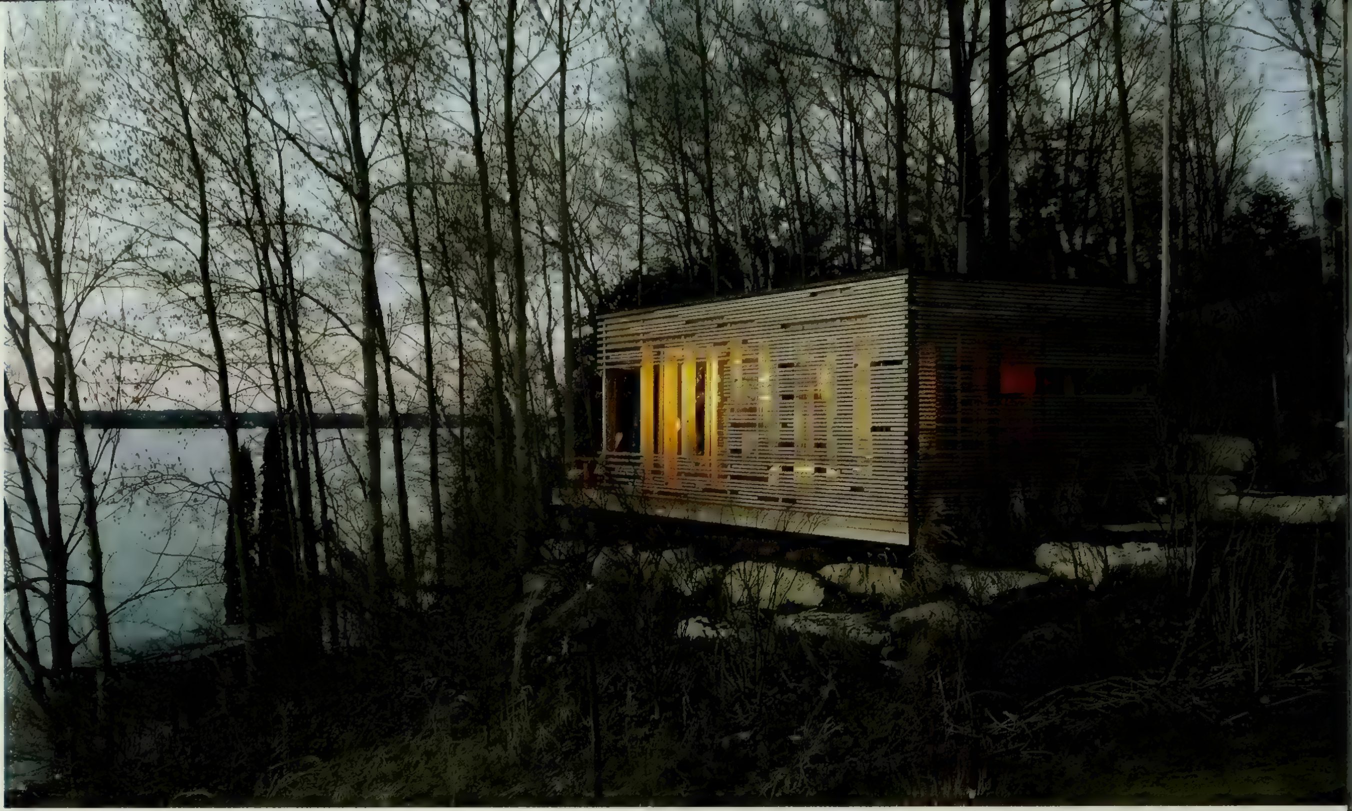
Given that the site had such a clear focus, the architects chose to frame the experience of it as unobtrusively as possible, with a simple, flat-roofed glass box, sheathed on three sides with a varied, rhythmic pattern of 1-by-3-inch horizontal cedar slats. Fabricated in a parking lot in Toronto next to a commercial building owned by the client, the structure was then

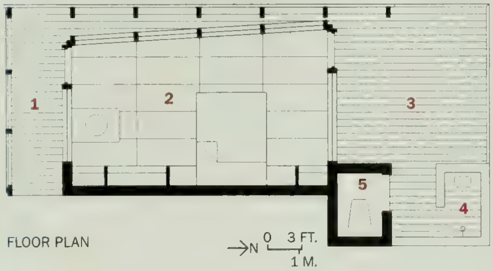


Overlooking Lake Simcoe, the cabin boasts excellent views. The floor of the building extends outside toward the lake to become a deck. A screen of 1-by-3-inch horizontal cedar slats covers portions of the floor-to-ceiling glass windows, contrasting openness with protection.

Canadian design journalist Kelly Rude contributes to a variety of magazines and journals, including Interior Design, Surface, Azure, *and* Canadian Interiors.

Project: *Sunset Cabin, Lake Simcoe, near Toronto, Canada*
Architect: *Taylor_Smyth architects—Michael Taylor, partner in charge; Michael LaFreniere, project team*
Consultant: *GROW (landscape)*
General contractor: *The Brothers Dressler, with Jaan Poldaas*





FLOOR PLAN

1. *Porch*
2. *Cabin*
3. *Deck*
4. *Outdoor shower*
5. *Bath*

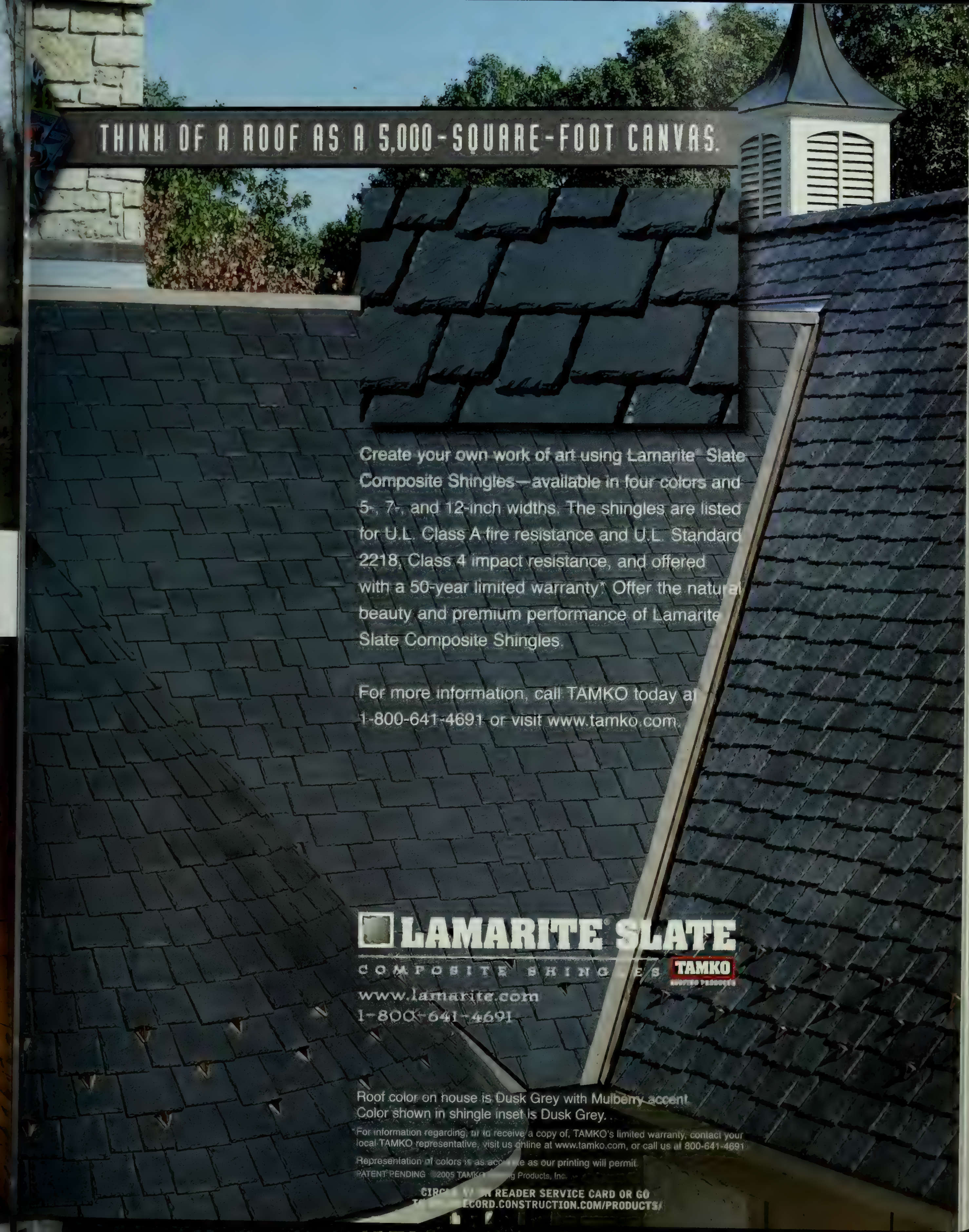
One enters from the south via an enclosed porch running the width of the cabin. This entry sequence provides a thoughtful transition between arriving and settling inside.

disassembled, moved on a flat-bed truck, and reconstructed on-site, supported by two steel beams on two concrete caissons. “The level of craftsmanship and detail is second to none,” says the husband, referring to the work of his builders, Jaan Poldaas and the Dressler Brothers, who are millworkers by trade.

Made with cedar windows, doors, and cladding, with birch-plywood panels for the interior floors, back wall, ceiling, and built-ins, the cabin was sited to orient the bed toward the summer sunset. You enter from the south via an enclosed porch running the width of the 15-by-18-foot, one-room shed. A nod to the mudrooms typical of the country houses of a bygone era, the porch is a thoughtful transition between arriving from the outside and stretching out on the bed to bask in the vista.

“Lie down and check out the view,” offers the wife. The left side of the window displays peek-a-boo glimpses, due to the narrow horizontal slats. On the right, a large span of open glass provides the full frontal view to the lake and beyond. Regular sights include migrating geese skidding on water in the fall and coyotes striding on ice in winter. Functioning year-round, the cabin is heated by a wood-burning stove and a small backup electric heater.

An outside shower deck positioned with just enough privacy yet



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totally open to the elements reflects the family's attitude toward design within the environment. Other examples of this ethos include a chemical composting toilet housed in a small outhouse that blends seamlessly with the cabin's exterior elements, and an organic flat roof planted with herbs and sedums, a hardy plant common on green roofs. Hugging the sloping hill, the roof camouflages the cabin, concealing it from the neighbors.

"The appeal of the cottage is in its one-room sense of enclosure, not unlike Laugier's primitive hut," Taylor proposes. "All wood, in the woods … open to it all," he continues. "And at the same time, it references the Modern tradition of pavilions in the landscape à la Philip Johnson and Mies van der Rohe. So it's a combination of private hut and an approach to Modern detailing."

Exposure to the elements has turned the cedar-clad cabin a soft silver gray. This sign of graceful aging is becoming increasingly rare, as original modest cottage buildings elsewhere on Lake Simcoe make way for either A-frame villa monsters or High Modernist monoliths.

"How does a building grow from its site?" Taylor asks. The new cabin succeeds in a manner of quiet utility, as a fitting tribute to a country cottage context of small, discrete buildings, where people still get away to put their feet up and let their hair down. ■

Slats break up the light into random patterns on the interior (above left). The cabin is no more than a cozy bedroom with views (above right), which are tempered by the filtered light, so as not to overwhelm the occupant (below).

Sources

Woodburning fireplace: *Morso*

Locksets: *Upper Canada Hardware*

Hinges: *LCN*

Windows and doors: *The Brothers Dressler, with Jaan Poldaas*

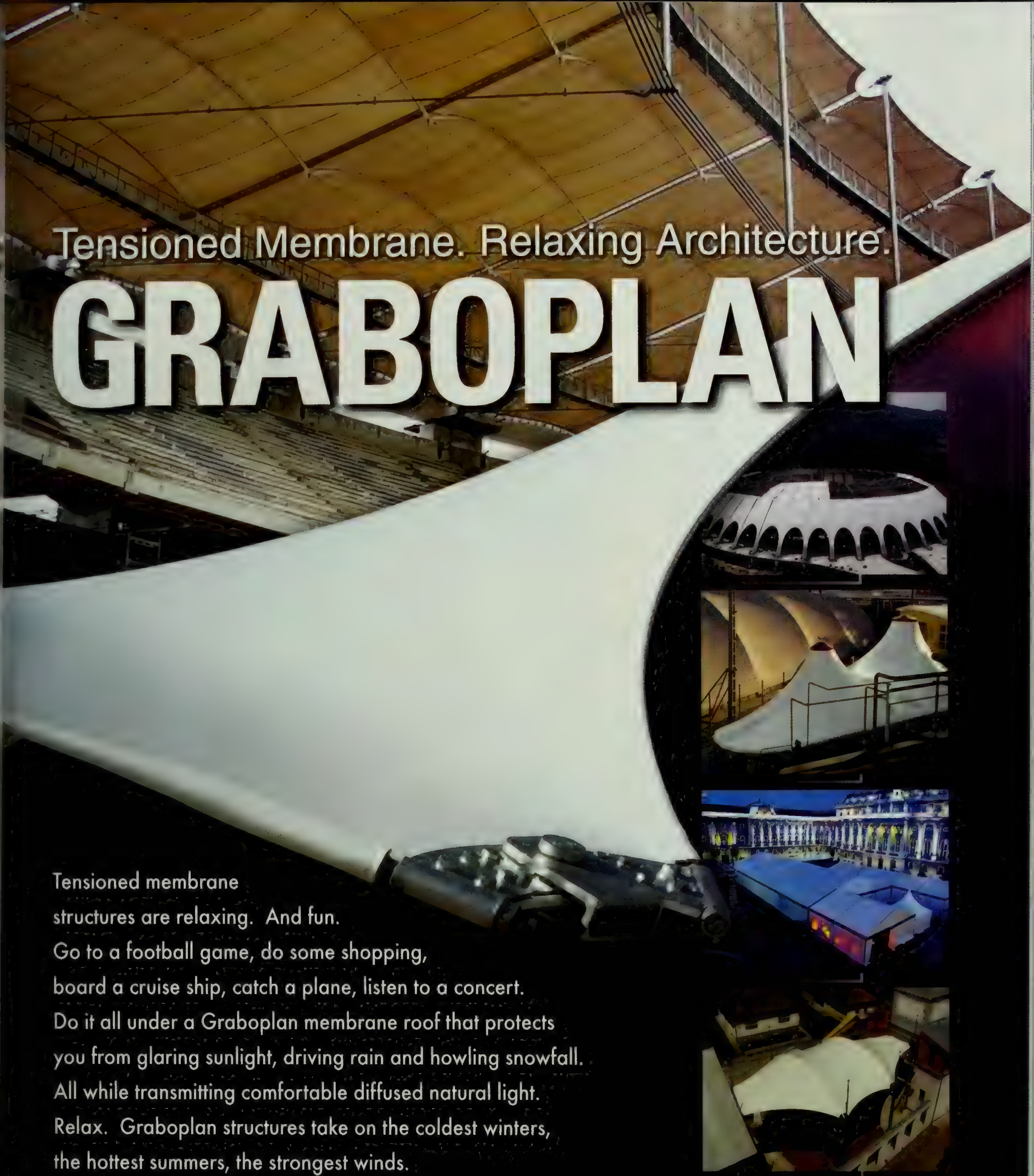
Exterior cladding: *T&G Siding*

Green roof: *Roofscapes*

Rocking chair: *Scott Laughton*

Composting toilet: *Sun-Mar*

For more information on this project, go to Residential at **www.archrecord.com**.



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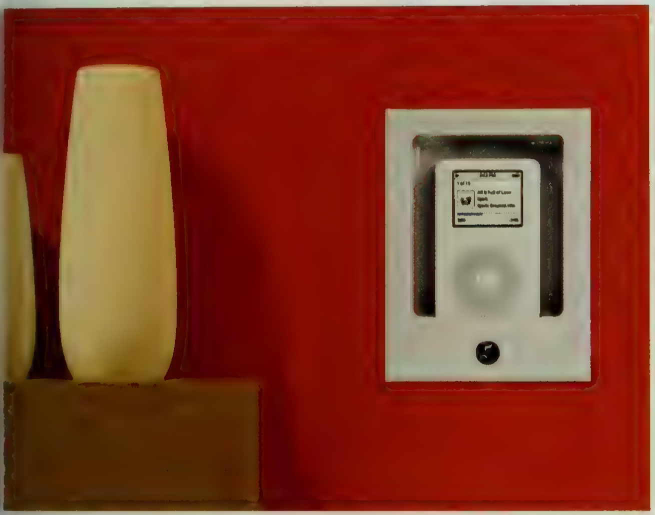
VH17

Residential Products CEDIA Review

Trimmed-down electronics and iPod compatibility were the main themes at the Custom Electronics Design & Installation Association trade show in Indianapolis last September. An abundance of flat-screen TVs and slim speaker solutions responded to an increasing appetite for low-profile electronics, while audio companies scrambled to build iPod functionality into multiroom music products. Here are a few highlights. *Rebecca Day*

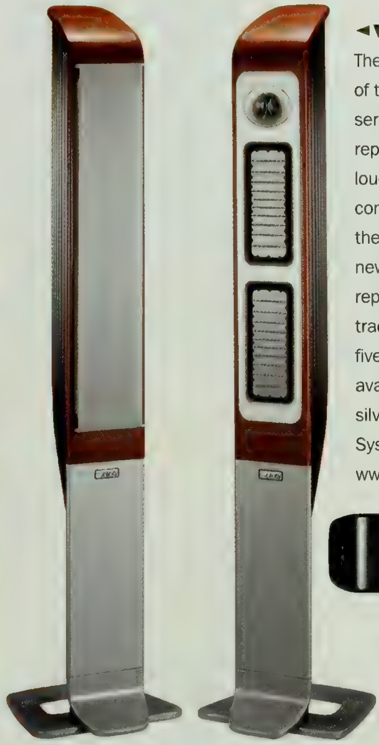
▼ MP3 wall docking station

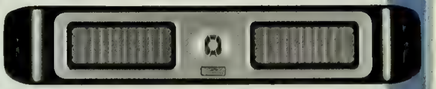
With iPort's IW-4 iPod dock, now the iPod can become an additional music source to a distributed audio system. The iPort dock mounts in the wall, where it wires into a whole-house audio system and electrical power. An infrared sensor at the bottom of the port accepts commands from an iPod remote control across the room or from a radio-frequency-controlled, touch-screen remote located elsewhere in the house. Alternatively, users can control the iPod from the port, which doubles as a battery charger. iPort, San Clemente, Calif. www.iportmusic.com **CIRCLE 200**



◄▼ Thin is in

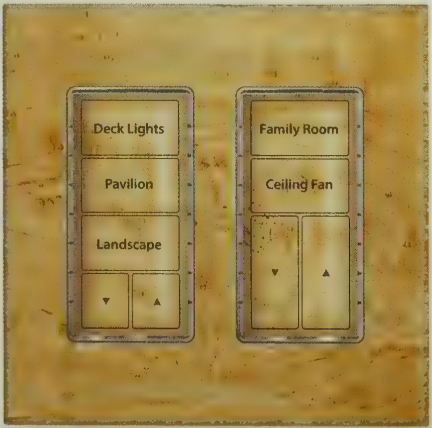
The boxy loudspeaker has gone the way of the bulky tube TV. Infinity's Cascade series of thin and shallow loudspeakers represents the new generation of loudspeakers that are engineered to complement flat-panel TVs. To achieve the thinner design, Infinity created a new, flat-panel midrange driver to replace the large cone driver used in traditional floor-standing speakers. The five models in the Cascade line are available in cherry veneer, high-gloss silver, or high-gloss black finish. Infinity Systems, Woodbury, N.Y. www.infinitysystems.com **CIRCLE 201**





▼ One touchy keypad

Colorado vNet replaces keypad buttons with a programmable touch-sensitive plastic surface that responds to various types of button taps. The configurable keypads replace the need for multiple keypad SKUs, and installers can modify the behavior of the touch pad to respond to the duration of touch. A single tap could mimic flipping a light switch or setting a lighting scene, while a longer touch could increase the intensity of lighting. A backlight reacts to ambient lighting to create an appropriate setting for the light level in a room. LEDs and audible tones provide feedback that commands have been implemented. Colorado vNet, Loveland, Colo. www.coloradovnet.com **CIRCLE 202**



▲ Home theater experience for smaller footprints

Da-Lite's Acoustical Imager provides a speaker solution for homeowners who can't accommodate floor-standing or in-wall loudspeakers but still want the home theater experience delivered by a projection TV screen. The Imager's frame incorporates left, center, and right front speakers, and a subwoofer with an additional pair of table- or floor-mounted speakers for surround sound complete the package. The screen is available in 4:3 or 16:9 aspect ratios and its Pro-Trim fabric covering is said to absorb light in the viewing area. Da-Lite Screen Company, Warsaw, Ind. www.dalite.com **CIRCLE 203**

Residential Products CEDIA Review

▸ The latest in television-mirror technology

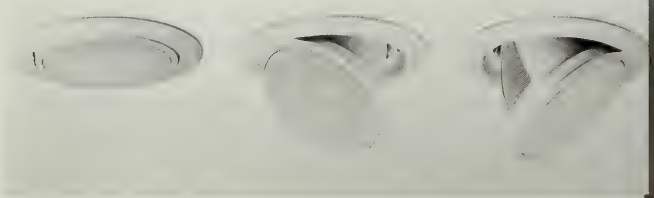
The mirror TV is a natural for any living space where clients want to watch television without the display dominating the room. When the TV is off, Philip's MiraVision becomes a standard mirror on the wall and hides all wires running behind the display. Available in 32" and 42" sizes, MiraVision provides a big-screen, space-saving solution for small rooms. MiraVision switches from mirror to TV mode at the touch of a button, and its frame can be replaced to match the décor. Philips Consumer Electronics, Atlanta. www.philipsusa.com **CIRCLE 204**

▴ Command center

Vantage Controls' TouchPoint HD is the first touch-screen controller to offer HDTV resolution for video content. The on-wall controller operates a full array of household subsystems, including lighting, security, HVAC, and appliances, as well as audio and video. The video input can display programming from cable or satellite TV as well as networked security cameras throughout the house. Vantage Systems, Orem, Utah. www.vantagecontrols.com **CIRCLE 207**

▾ Programmable in-ceiling speakers

Consumers are showing a preference for in-ceiling speakers over in-wall types, and manufacturers are looking for ways to differentiate products. SpeakerCraft's novel approach in the new Time line of speakers uses motorization to position the speakers for music or home theater and then raise them flush to the ceiling when not in use. When activated, the speakers drop from the ceiling at angles of 15, 30, and 45 degrees and then rotate toward the preprogrammed listening position. Presets enable installers to address multiple seating locations and different music and movie preferences. SpeakerCraft, Riverside, Calif. www.speakercraft.com **CIRCLE 205**



▾ Largest LCD TV yet

Sharp has pushed the envelope of the LCD TV with the largest screen size to date, a 65" model that delivers high-end 1080p resolution. With a built-in HDTV tuner and CableCard slot, the LC-65D90U can show a high-definition cable broadcast without add-on components for users who want to minimize the amount of electronics in a room. A built-in *TV Guide On Screen* provides users with an electronic program guide if they choose not to have a cable box. Both the stand and the speakers are detachable. Sharp Electronics, Mahwah, N.J. www.sharpusa.com **CIRCLE 206**

◂ Space-saving bar-style speaker

Polk's Surround Bar is designed for homeowners who want to improve on the sound quality of plasma TV speakers but don't want to sacrifice floor or ceiling space to get it. The single, bar-style speaker mounts above or beneath a plasma TV and accepts five rear-panel inputs to deliver five channels of surround sound from a single enclosure. Using signal processing and acoustical geometry, the speaker can work in any room and even outdoors in a protected location. Polk Audio, Baltimore. www.polkaudio.com **CIRCLE 208**

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Products

Preservation

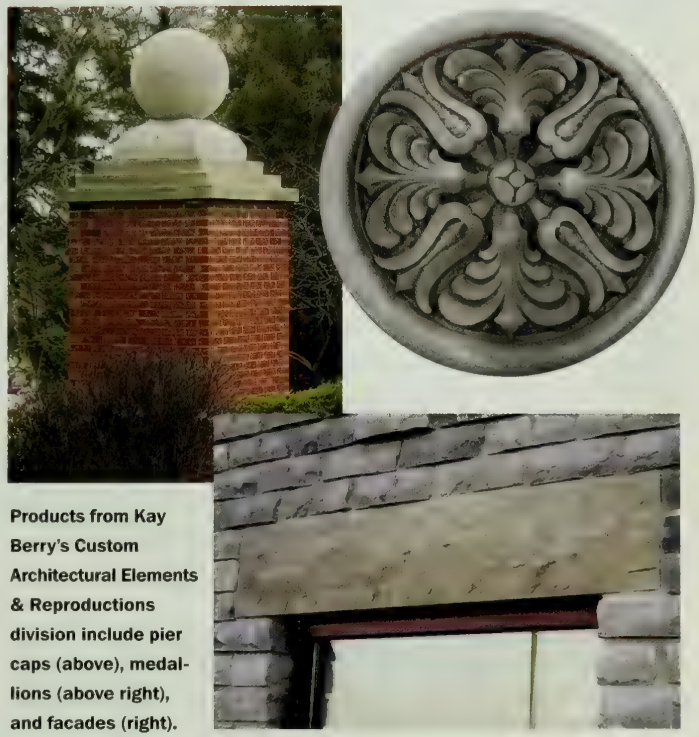
Our theme this month focuses on the latest **preservation products** on the market, including offerings for renovation, restoration, and adaptive-reuse projects. From **the rooftop to the underlayment**, these products help transform, preserve, and protect a range of building types. *Rita Catinella Orrell*

New cast stone reproduction source

Kay Berry, a manufacturer and distributor of cast stone products based in western Pennsylvania, has recently introduced the company's Custom Architectural Elements & Reproduction division. Employing Kay Berry's existing cutting-edge technology, the new division produces made-to-order decorative stone accents in a broad range of colors for residential and commercial builders and architects. Established in 1993, the company product line includes stone sculptures, benches, birdbaths, and a wide variety of garden and home accent rock designs.

Kay Berry's team of artists work with building professionals to produce original stone artwork that reflects the vision of a particular project, or to recreate existing designs, accurately matching color and texture. The architectural elements are available in a range of styles—from classic Old World to contemporary—in quantities from one to 1,000.

Two sample products from the new division include a reproduction of a meticulously detailed decorative medallion (far right) created by the latest rubber mold technology, and a Roman-style ball finial and pier cap (near right) that make a striking ornamental accent to a brick column. The division's work is not limited to outside projects: The facade on the main entrance of the Kay Berry production facility (right) demonstrates examples of split rock, sill, and headers designed and created inside the plant. Kay Berry, Saxonburg, Pa. www.kayberry.com CIRCLE 209



Products from Kay Berry's Custom Architectural Elements & Reproductions division include pier caps (above), medallions (above right), and facades (right).

The Revere House (left), built around 1680, stands today clad in cedar siding.

Cedar siding continues to protect a landmark

The Paul Revere House, built around 1680, is downtown Boston's oldest building and the twelfth-most-visited historic home in the nation. Restored to its original condition in 1907, the home still retains 90 percent of its original structure.

In addition to undergoing normal maintenance, a recent siding restoration using western red cedar clapboards was completed on the historic landmark over the course of a few weeks last fall. According to Nina Zannieri, executive director of the Paul Revere Memorial Association that owns and operates the home, cedar siding is used for the home for a variety of reasons. "Information provided by architect Joseph Chandler, who did the original restoration in 1907 to 1908, indicates he found clapboards on the house below one of the surviving 17th-century casement windows," says Zannieri. In addition, a possibly original clapboard was found when the building was painted in 1996. There is also documentary evidence from the late-17th and early-18th centuries indicating that cedar was available in Massachusetts and was used on buildings of a similar age and construction to the Revere House.

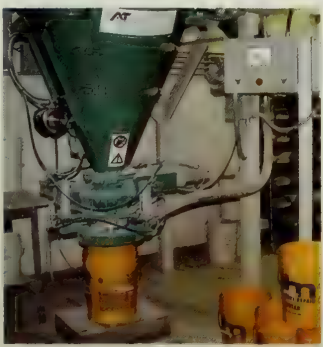
The house uses high-grade western red cedar siding with a molded ege, in a range of lengths from 24" to 44". Using the material originally intended for the home was a top priority for the restoration project team. "Even if lower-maintenance or longer-lasting materials are available today, our goal of historical accuracy must dictate our choice of restoration materials," says Zannieri. "In the case of the Paul Revere House, we're lucky that we're able to use a material as beautiful and durable as cedar, while still providing a historically accurate restoration." Western Red Cedar Lumber Association, Vancouver. www.wrcla.com CIRCLE 210

▼ Roof shingles built to last

Centennial Slate roof shingle simulates the natural color variations of true blended slate at a fraction of the cost. Centennial Slate utilizes CertainTeed's Super Shangle construction with two full-size, 18" x 36" base shingles, resulting in four layers of shingle protection and 8" exposure when applied. The shingle is available in six colors, is algae-resistant, features Class A fire rating, and meets ASTM D3462, a tough shingle performance standard required by many of today's building codes. CertainTeed, Valley Forge, Pa. www.certainteed.com **CIRCLE 211**

► Affordable replacement

Builders Clad-Wood windows are crafted using solid pine AuraLast wood and offer homeowners a more affordable choice for wood window replacement. Backed by a 20-year warranty against wood decay, water absorption, and termite infestation, the windows come standard with high-performance, argon-filled, low-E glass with coatings that block 84 percent of UV rays and deliver 96 percent improvement in thermal performance during the winter. Jeld-Wen, Klamath Falls, Ore. www.jeld-wen.com **CIRCLE 213**



◄ Local restoration mortar

Cathedral Stone Products, the exclusive U.S. manufacturer of Jahn historic restoration mortar products, has installed new manufacturing and testing laboratories at company headquarters in Hanover, Maryland. With the new plant, orders can be shipped within 24 to 48 hours. Previously, the products were formulated and shipped from Germany. Cathedral Stone Products, Hanover, Md. www.cathedralstone.com **CIRCLE 215**

▼ Historic charm without the historic hassle

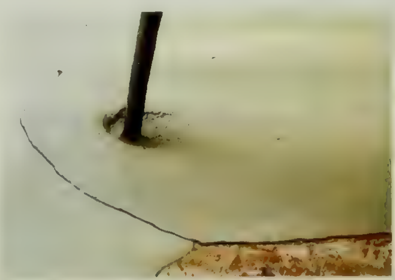
Custom made for each project, Kolbe & Kolbe's Old World Classic windows feature a brass pulley system, complete with brass chains and alloyed weights, that lower the unit to operate with ease due to the proportionate balance between the sash and weights. Ideal for historic applications, the windows are available in various wood species and are traditionally designed triple-hungs, double-hungs, and single-hung units. Kolbe Windows & Doors, Wausau, Wis. www.kolbe-kolbe.com **CIRCLE 212**

► Welcome adaptive reuse

The adaptive reuse of a carriage house and barn (top right) at Rockwood Park, Wilmington, Delaware, into the new visitors center (below right) was designed to match existing features of the Park's historic 19th-century Mansion Museum. Follansbee's TCS II roof was specified to match the original terne roof that was installed on the mansion in the late 1970s. The visitor's center roof was completed with 11,000 square feet of Follansbee's TCS II in 1" double-lock, standing-seam profile. To maintain consistency with the mansion's color scheme, the roof was painted with Follansbee's Rapidri paint in a customized yellowish gray color. Follansbee, Follansbee, W.V. www.follansbeeroofing.com **CIRCLE 214**

▼ All on the same level

USG's Tile and Flooring Division has introduced a new family of poured, self-leveling cement underlayments called Ultraflow. All four of the new products offer high compressive strengths, performance, and versatility, utilizing a uniquely engineered cement chemistry. The self-leveling underlayments come presanded in a bag, mix easily at the job site, and can be applied in a wide range of commercial, institutional, and residential flooring applications. USG, Chicago. www.usg.com **CIRCLE 216**



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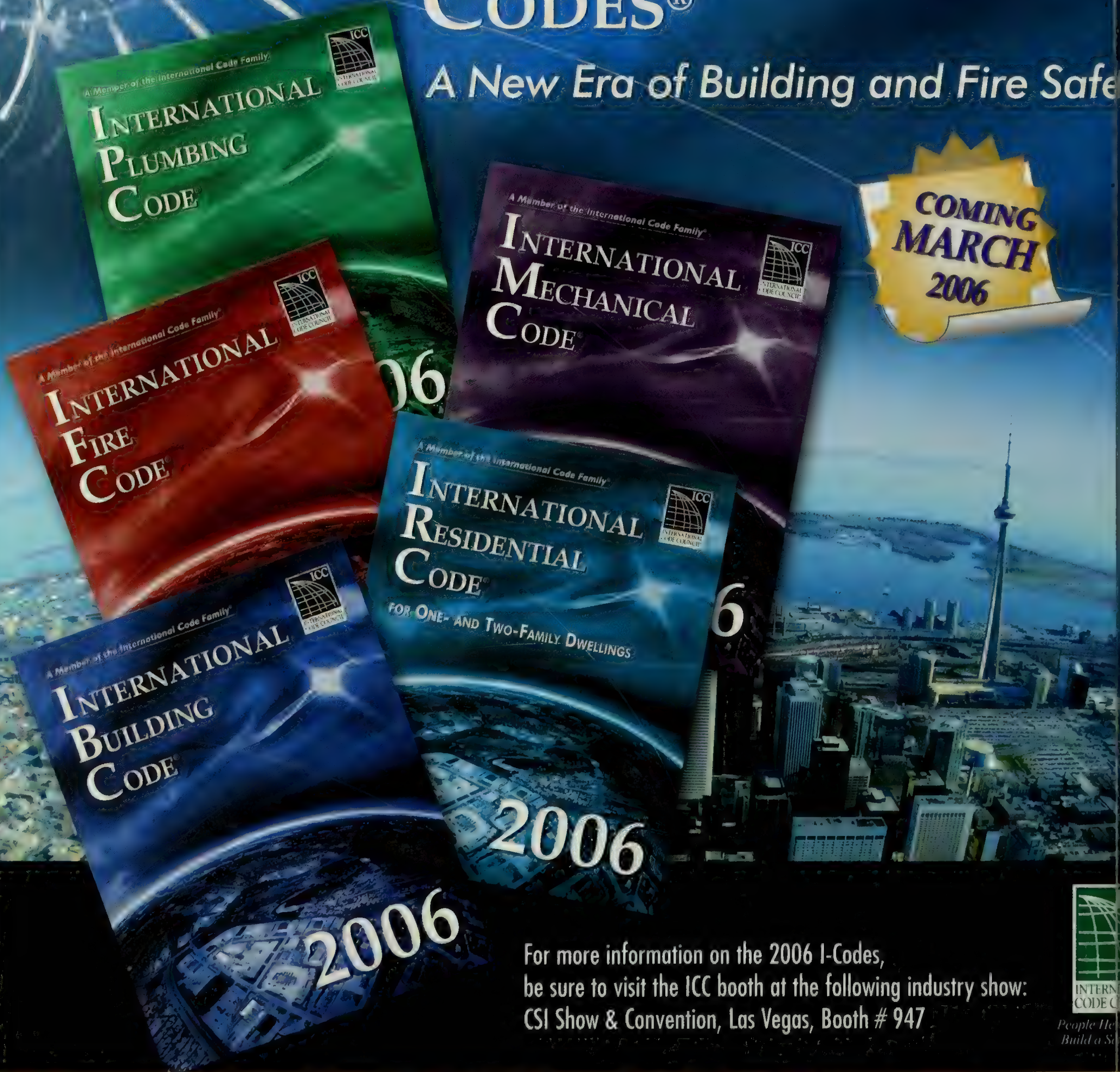
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Product Briefs

▸ Expressive tiles

nagine Tile's Expressions eramic tile designs are reated by a combination of tate-of-the-art digital imaging ınd cutting-edge ceramic pro- uction techniques. The Canyon)esign (right), inspired by a ›iece of metal discovered in a !00-year-old barn, has a natu- al textured look and comes in our colors, in both 16"-square ınd 8"-square configurations or residential and commercial)rojects. The Florence design, inspired by Renaissance frescoes, simulates in great letail the distressed and crackled effects of age on a crafted wall surface. Imagine 'ile, Bloomfield, N.J. www.imaginetile.com **CIRCLE 217**

▴▸ Modular refrigeration

Thermador's Freedom Collection features the first modular fresh-food and freezer columns that allow built-in refrigeration to fit anywhere in the kitchen. Set to debut on July 4, the collection will feature 24" and 30" fresh-food columns; 18", 24", and 30" freezer columns; 18" and 24" dispenser freezers; and a 36" bottom freezer with two or three doors. The collection will be available in stainless steel or matched to existing kitchen cabinetry for a fully integrated look. The collection will also offer a range of handy features, including a hinge that allows all the columns to be fully flush-mounted to the cabinetry; a motorized Liberty Shelf that moves a fully loaded shelf of up to 20 pounds with the touch of a button (above right); and a pull-down flip tray on the external water dispenser that accommodates pitcher-size containers. Thermador, Huntington Beach, Calif. www.thermador.com **CIRCLE 219**

Product of the Month Venicia Cabinets

KraftMaid Cabinetry, known for traditional designs, has changed pace with Venicia, a new line of European-styled residential and light-commercial cabinets. Outside of the kitchen, the cabinets can be used in baths, laundry rooms, home offices, and other spaces.

Venicia is an open-frame, semicustom cabinetry line that offers the look of imported cabinets at a lower price point. The open-frame design increases usable storage space, and the absence of horizontal rails and vertical stiles improves interior access. Venicia offers 29 door styles ranging from modern to transitional designs, 31 color and finish choices, two stainless-steel wall-hood designs, and more than 40 exclusive decorative hardware pieces. KraftMaid Cabinetry, Middlefield, Ohio. www.kraftmaid.com CIRCLE 218

▾ Operable screen system

Nana Wall Systems has introduced a European-designed operable screen system to the U.S. market. The NanaScreen system is licensed by Nana Wall Systems and has been customized to complement the large, movable NanaWall opening glass wall system. NanaScreen is a series of collapsible, pleated-screen panels that connect the full width of the NanaWall, keeping out the bugs but letting in the breezes. The screen features 4"-wide, vertical cassettes to support the reinforced-polypropylene screen mesh. When open, the NanaScreen collapses to the side and virtually vanishes into its vertical stiles with a simple glide of the panels. Nana Wall Systems, Mill Valley, Calif. www.nanawall.com **CIRCLE 220**

For more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Products, then Reader Service.

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Product Briefs

◄ Shaping a spa environment
Lasco Bathware's new luxury brand, Contours, includes the new Radius Series bath and shower modules. Lasco partnered with Blue Design, a Los Angeles design firm, to develop the five contemporary baths and three luxury showers. Inspired by design elements of the BMW Z4 sports car, the baths feature soft concave surfaces, pearlescent finishes, and surface tension details. The baths include an air-and-water hydrotherapy system, an inline heater, and one-touch functionality. The Euro-styled showers, in 48" and 60" widths, have optional steam and body shower sprays, chromatherapy lighting, and a teak floor insert. Lasco Bathware, Anaheim, Calif. www.lascobathware.com **CIRCLE 221**

If it can stand the heat ...
orway's Solarnor AS has developed the st high-temperature polymer collector sing GE Plastics' Noryl EN150SP resin. ie company wanted to find a replaceient for the expensive and cumbersome hoices of copper and aluminum for ie reservoir in their solar panels. The olarnor AS solar-panel system (right) ollects the sun's energy to heat water iat can, in turn, heat rooms and provide ot water. Noryl resin's ability to withtand high water temperatures, plus its excellent hydrolytic tability under constant exposure to water, made the mateal a good candidate for the Solarnor design. Also on the olar-energy front, CSI Solar Technologies selected GE's exan EXL 9330 resin as a durable cover material for its olar-module-battery connection box. GE Plastics, Pittsfield, 1ass. www.geplastics.com **CIRCLE 222**

◄ Superb solar control combination
One of RECORD'S 2005 Product Reports Editors Picks, Solarban 70XL glass is a new solar-control low-E glass from PPG that offers an unprecedented combination of solar control and visible light transmittance (VLT) with a transparent, color-neutral appearance. In a standard 1" insulating glass unit, Solarban 70XL has a Solar Heat Gain Coefficient of .27 with a VLT of 63 percent. That equates to a Light to Solar Gain ratio of 2.3, which surpasses the performance of any other solar-control low-E glass on the market. Independent testing has shown that specification of Solarban 70XL glass could defray initial capital costs for cooling equipment by as much as 26 percent. PPG Industries, Pittsburgh. www.ppg.com **CIRCLE 223**

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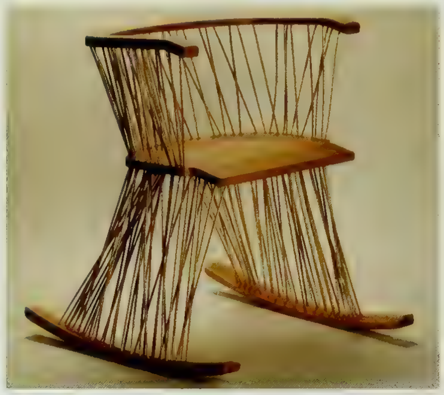
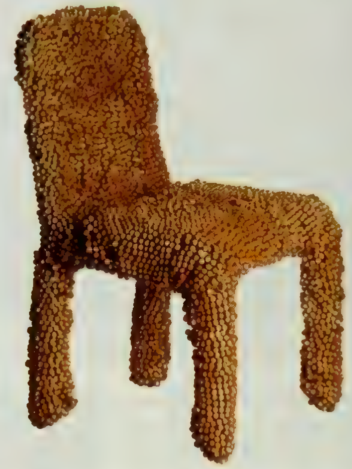
Product Briefs Promosedia Review

Promosedia is an annual trade fair dedicated entirely to residential and contract seating made in the Friuli region of Italy. The following are a few the winners in the Invited and Top Ten Competitions. *Charles Linn, FAIA*



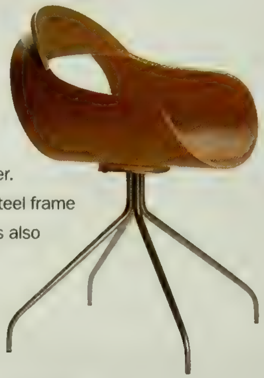


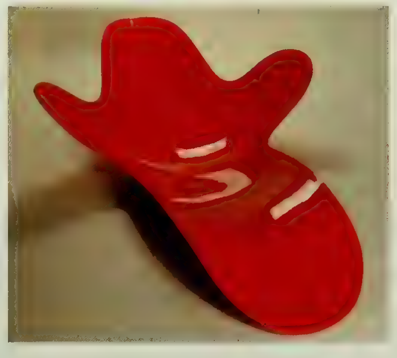
▲ Invited competition winners

The Rodrock (left) and Soft (right) chairs were two of Promosedia's six International Design Competition winners. Rodrock was designed by Munich-based Weisshaar/Kram. Its solid beech skids, bottom, and back are fastened together using dozens of ⅜"-wide wooden dowels. For accuracy's sake, holes for the dowels are drilled with the a of a computer-controlled drilling machine. Soft, designed by the Swedish firm Front, is a comfortable, form-fitting chair made of a wooden form wrapped with hundreds of small balls of wood that have been threaded over elasti cables. Promosedia, Udine, Italy. www.promosedia.it **CIRCLE 224**

► Fits like its namesake

Promosedia's Top Ten Chairs are selected by a jury made up of designers, journalists, and manufacturers. One of their selections included this sensuously contoured armchair called Glove. Its one-piece, ergonomically fitted seat and back are covered with oak veneer. Glove was designed by Daniel Rode for Vemap. It is supported by a steel frame that is finished in a satin chrome. A padded seat covered in leather is also available. Promosedia, Udine, Italy. www.promosedia.it **CIRCLE 225**





◄ Colorful recliner

The Lazy Mary is a simple, one-piece chaise longue made injection-molded composite resins that are reinforced with fiberglass. It is ideal for poolside use at spas, resorts, and at home. The weather-resistant recliner comes in a numbe of colors and can be stacked for storage. Monica Graffeo designed the chair for Disguincio. Disguincio, Pordenone, Ita www.disguincio.com **CIRCLE 226**

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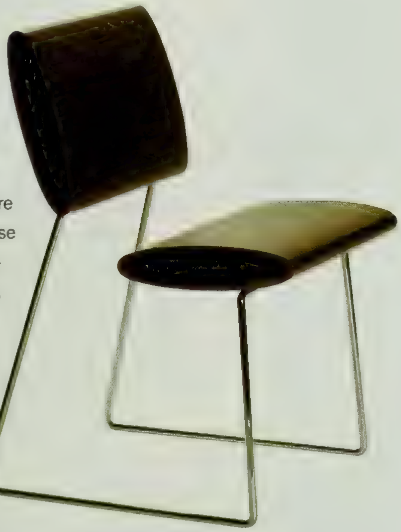
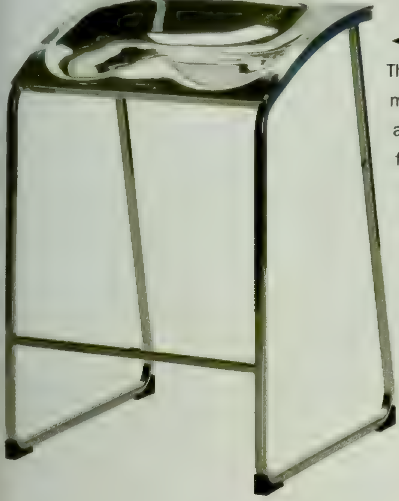


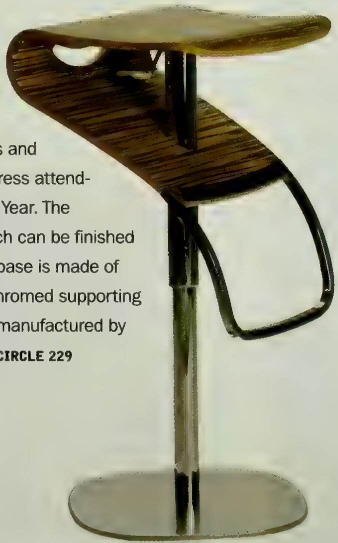
Springy but firm seating

esigners and members of the press at the show made ogie their choice for Promosedia's Residential Chair of e Year. Daniel Rode's dining-room chair for P.S.M. uses t laminated-wood tubes for the seat and back, which are vered with either light- or dark-stained oak veneer. These mponents are attached to a steel frame finished in polhed chrome, which has a slight give when in use. P.S.M., dine, Italy. www.psmsedia.com **CIRCLE 227**



◄ Smooth, contoured comfort

The Arod stool is fitted with an anatomically inspired, molded-plastic seat, which is available in a variety of solid and transparent colors, as well as chrome. A chrome-finished, tubular-steel superstructure is pictured (left); however, a second version, supported by a stainless-steel base and an adjustable-height column is also available. Claudio Dondoli and Marco Pocci of Studio Archirivolto designed Arod for Pedrali. Pedrali, Brescia, Italy. www.pedrali.it **CIRCLE 228**



► A seat for swingers

esigner Giovanni Cigana's Dafne, a stool for use in bars and estaurants, was selected by design professionals and press attending Promosedia as their choice for Contract Chair of the Year. The aminated-wood seat is covered with beech veneer, which can be finished in bleached-oak, ebony, and zebra-striped finishes. The base is made of textile-patterned stainless steel, and the height of the chromed supporting column can be adjusted using a gas pump. The stool is manufactured by Rover Plus. Rover Plus, Udine, Italy. www.roverplus.com **CIRCLE 229**

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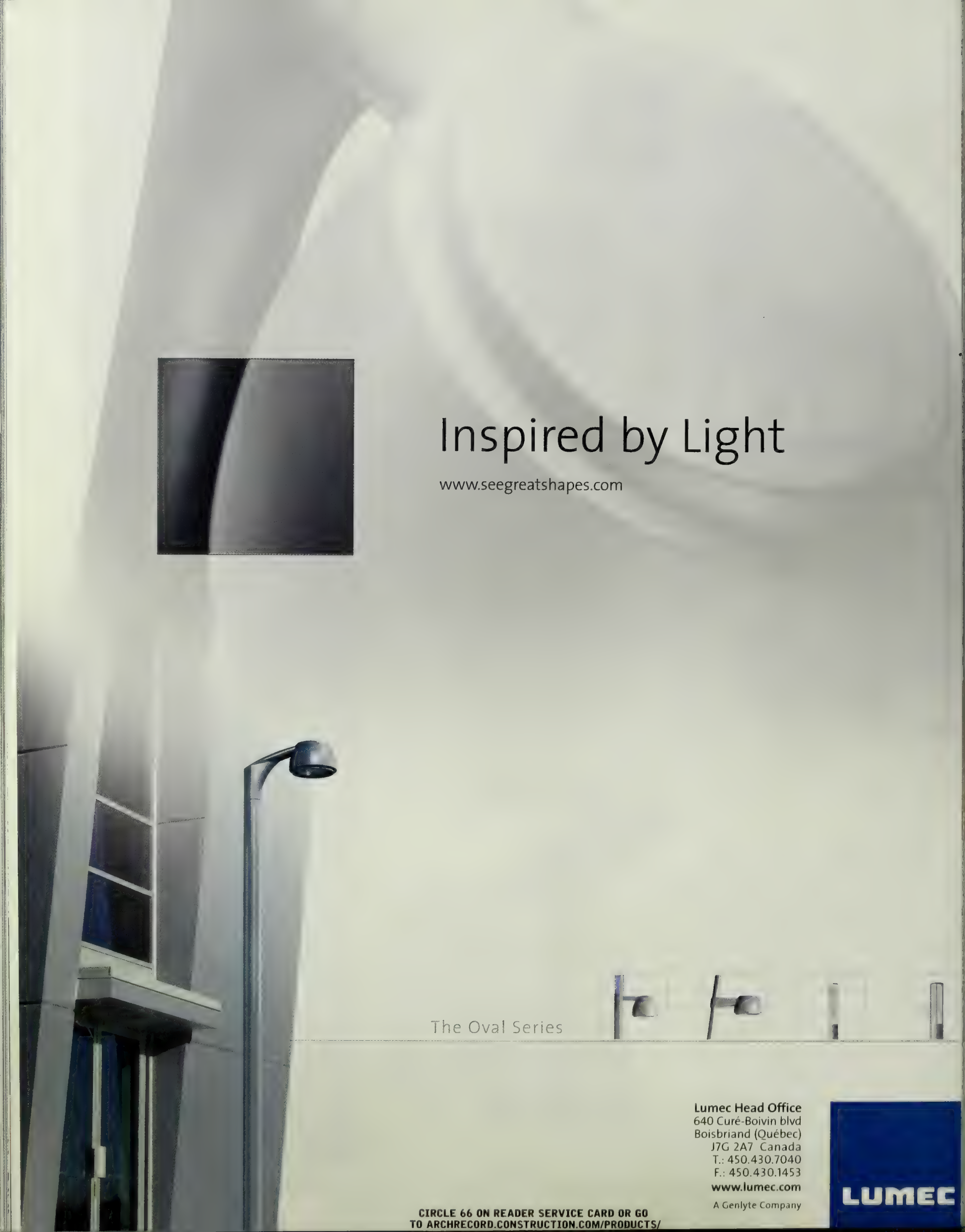

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Product Resource: Literature

Corian showcase magazine

To celebrate the finest works created with Corian—from Ron Arad's Lo-Res-Tabula-Rasa table to KOL/MAC's Resi-Rise skyscraper of the future—DuPont has published the first edition of *Possibilities*, a free, 52-page magazine that includes 115 images and descriptions of inspiring ways that Corian has been used as a design material. DuPont, Wilmington, Del. www.coriandesign.dupont.com **CIRCLE 230**

ighting specifier reference

eta Lighting has developed its *Specifier eference*, a 432-page, full-color guide to eta's complete line of luminaires, including rchitectural, security, high and low bay, anopy and parking, directional accent, ign, and indirect fixtures. Each luminaire is ncluded, complete with product and appli-ation photo, and photometric, dimension, nd lamp info. Beta Lighting, Sturtevant, Vis. www.beta-kramer.com **CIRCLE 231**

Planning for a colorful future

Pantone's Summer 2007 edition of the *Pantone View Colour Planner*, its cross-discipline color forecasting tool, is titled *The Evolution of Colour*. The planner offers nine palettes for Summer 2007 for use in fashion, industry, cosmetics, interiors, and graphics. The planner sells for $750 from Pantone distributors nationwide. Pantone, Carlstadt, N.J. www.pantone.com **CIRCLE 232**

Hardcover spec guide

Focal Point's *2006 Specifications Guide* is completely redesigned and expanded to a 400-page hardcover book. Highlights include a set of indexes to help find luminaires by either application type or family name, over 100 application photographs, and a sturdy slipcase to store the book and new brochures sent throughout the year. Focal Point, Chicago. www.focalpointlights.com **CIRCLE 233**

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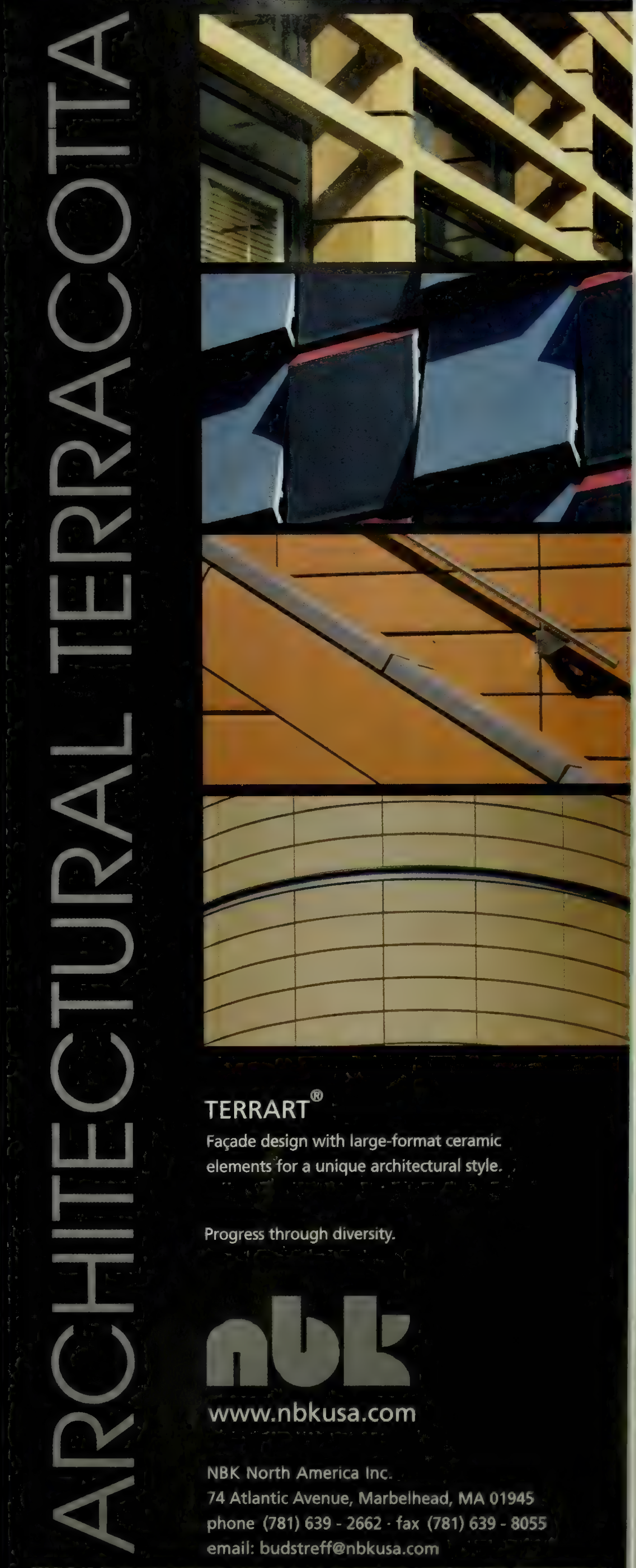

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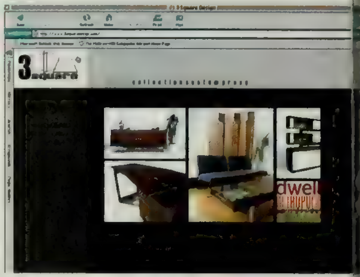


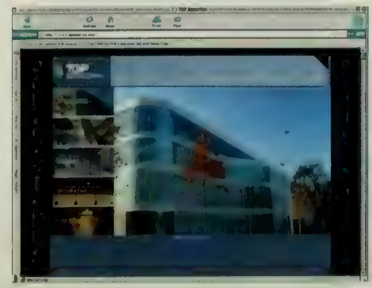
Brooklyn-based 3 Square Design presents its best-selling storage, shelving, table, seating, and screen designs, along with a preview of its new Thin-Line series of furnishings for 2006. New options are planned for Spring 2006, including dining tables and chairs, beds, and additional upholstered pieces. The site also includes information on the firm's custom design capabilities an some recent mentions in the press.

http://designsponge.blogspot.com

Drawing roughly 7,000–10,000 visitors a month, *Design*Sponge* editor Grace Bonn turns a curator's eye toward t products featured on her dail blog. Launched in August 200 *Design*Sponge* averages five to-six posts a day, including store and product reviews, sa and contest announcements, new designer profiles, trend forecasts, and store and stud tours. Last month, the site offered a holiday gift guide fo design devotees, organized b different price points.

http://glasscor.cristul2.com

Glasscor is a Portuguese brand of handmade accessory and lighting designs in colored glass and ceramic. Available in both Portuguese and English, the new Web site includes an easy-to-access product catalog that includes some technical data, drawings of the pieces, and color options. A link page guides readers to sites offering more information about Glasscor's local region in Portugal as well other design sites of interest.



www.tgpamerica.com

Technical Glass Products has launched a new Web site designe to provide the trade with information, specifications, and ideas for the application of the company's new architectural products, includ ing structural glass, surfacing materials, decorative glass, framing, and more.

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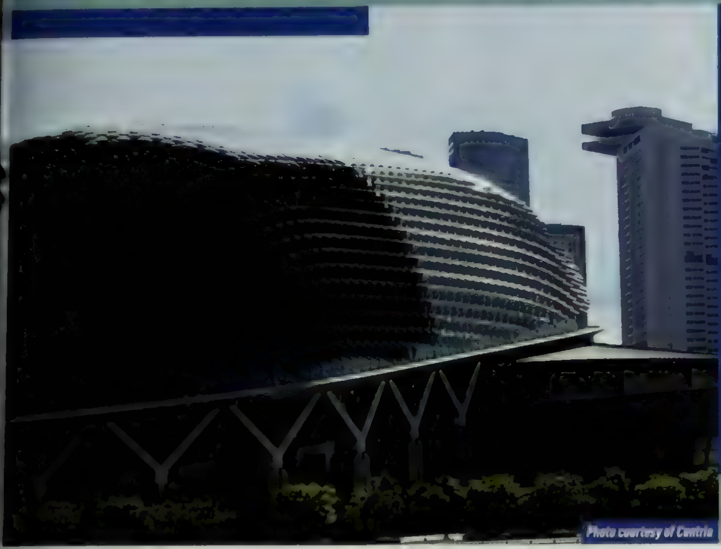
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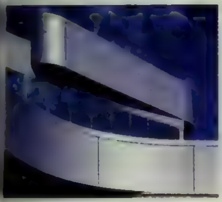


202-206 **Thermal and Moisture Control in Exterior Metal Walls**

By Peter J. Arsenault, AIA, NCARB, LEED-AP

Provided by Centria

LEARNING OBJECTIVES:
- Describe thermal and moisture control performance for exterior metal walls
- Define the components of an exterior wall system assembly
- Analyze how different climates affect design of exterior wall systems
- Review the advantages of using rainscreens in building design
- Evaluate design criteria for superior performance exterior wall systems

207-211 **Air Barriers: Increasing Building Performance, Decreasing Energy Costs**

By Charlotte Forbe

Provided by Dupont Tyvek

LEARNING OBJECTIVES:
- Explain recent trends in air barriers for buildings
- Understand the physics of air and moisture movement through the building enclosure
- Discuss air barrier functions, benefits and performance requirements
- Select the appropriate air barrier for building projects

213-217 **Concrete Waterproofing with Crystalline Technology**

By Stanley Stark, FAIA

Provided by Xypex

LEARNING OBJECTIVES:
- Understand how crystalline technology works with concrete to provide high performance waterproofing qualities
- Explain the difference between porosity, permeability and the mechanics by which water is absorbed through concrete structures
- Discuss how crystalline waterproofing technology improves the durability of concrete structures and reduces maintenance
- Identify appropriate crystalline technology product applications for various types of concrete construction
- Analyze how crystalline technology admixtures can impact building life cycle and project construction costs

218-222 **The Pros and Cons of Restoring and Replacing Wood Windows**

By Karin Tetlow

Provided by Artistic Doors & Windows, Inc.

LEARNING OBJECTIVES:
- Analyze the choices between restoring and replacing old wood windows
- Describe the components and functions of old and replacement wood windows
- Examine design issues, options, alternatives, and recommendations for renovation of old wood windows

Thermal and Moisture Control in Exterior Metal Walls

Achieving durable, economical, and sustainable metal wall systems

Provided by Centria

By Peter J. Arsenault, AIA, NCARB, LEED-AP

Water in liquid and vapor states, and temperature changes have long been recognized as the most destructive weathering elements affecting the entire building envelope, especially exterior walls. Accordingly, moisture management and thermal efficiency are critical keys to a successful exterior wall system. This success is best achieved when buildings are designed to respond to environmental and climatic conditions. However, since the predominant design of exterior walls currently employs multiple material components that are used in different climates, care must be taken to understand the interaction and proper selection of those different components.

> ***The combination of these energy efficiency changes and this comparatively higher moisture level has caused a new concern regarding moisture retention in exterior wall systems that can create design challenges for architects.***

1. Moisture Problems and Causes

The rapid rise of energy costs in the early 1970s led to a new standard of design for building envelopes that was more energy efficient and airtight than before. This is reflected in the growing number of energy code changes that require higher R-values and lower air infiltration rates for exterior walls, and other parts of the building envelope. Meanwhile, occupied spaces of buildings achieve relative humidity (RH) levels that are frequently around 40 percent. The combination of these energy efficiency changes and this comparatively higher moisture level has caused a new concern regarding moisture retention in exterior wall systems that can create design challenges for architects. The problems caused by the presence of moisture in a wall system cavity include:

- Corrosion of metal structural elements in the wall cavity.
- Reduction of thermal values of some insulation.
- Deterioration of internal components, such as tapes and wraps.
- The potential for the growth of mold within the wall system.

While the first three of these concerns are common and long standing, mold has emerg as a major concern, particularly in multi-component walls. The three elements required mold to grow are water (in vapor or liquid form), moderate temperature, and an organic fo source that applies to many wood-based or paper-covered building materials. Modera temperature inside a wall cavity is common, which means that controlling mold requi eliminating either the food source or moisture, or both.

2. Performance Requirements for Outer Wall Materials

The weathering element of a multi-component wall system is the outer wall material. addition to being the aesthetic wrap for the building, it is very important in determining t rest of the wall system design. Moisture management begins with the selection of t outer material.

Porous Materials

Materials like masonry, precast concrete, Exterior Insulation Finish Systems (EIF and Glass Fiber Reinforced Concrete (GFRC) are porous materials that will absorb a retain moisture. Wind-driven rain in particular can be an issue for these poro building materials that challenge designers to address the conditions that arise af a storm. When the sun heats up the outer wall, the absorbed moisture is changed water vapor. The vapors move from the warm, high-RH area to the colder, oft air-conditioned interior. A problem can occur in cold or moderate climat where the vapors can pass through the wall system components, enter the wall cavi and condense. (Figure 1)

CONTINUING EDUCATION

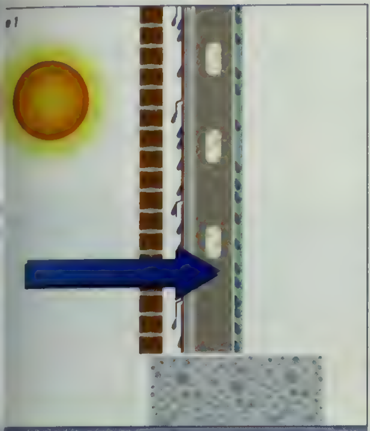
Use the learning objectives below to focus your study as you read **Thermal and Moisture Control in Exterior Metal Walls.** To earn one AIA/CES Learning Unit, including one hour of health, safety, welfare credit, answer the questions on page 206, then follow the reporting instructions on page 224 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Describe thermal and moisture control performance for exterior metal walls.*
- *Define the components of an exterior wall system assembly.*
- *Analyze how different climates affect design of exterior wall systems.*
- *Review the advantages of using rainscreens in building design.*
- *Evaluate design criteria for superior performance exterior wall systems.*

e 1



el porous materials are prone to moisture in wall cavities when heated by the sun

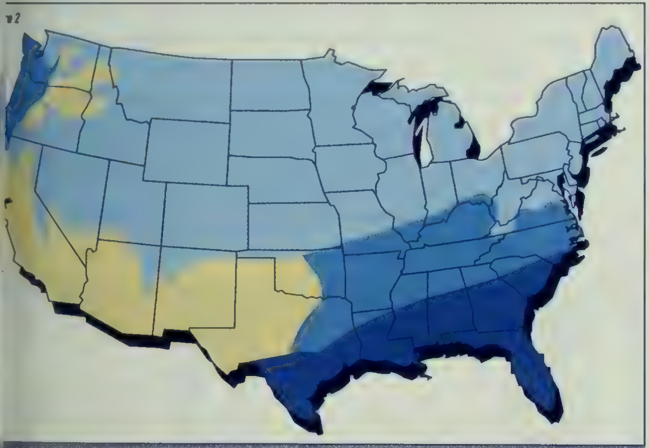
Non-Porous Materials

Other materials, like metal, glass, and polymer-based walls are non-porous and do not retain moisture. They eliminate a large portion of the moisture or water vapor problem through their characteristic of not absorbing water. Metal cladding systems are such materials and they can further be designed to act as rainscreens, to minimize water entry and to ventilate wall cavities where moisture can collect.

Climatic Zone Considerations

n of the four U.S. climatic zones raise varying degrees of moisture concerns. (Figure 2) ne southeast, during the summer months, the hot and humid ambient conditions can l to entrapment problems in the wall system. For the northern states, moisture control nore moderate during the summer, while controlling moisture from interior conditions ng the winter is critical. Arid areas are considered low risk and do not have sture problems.

e 2



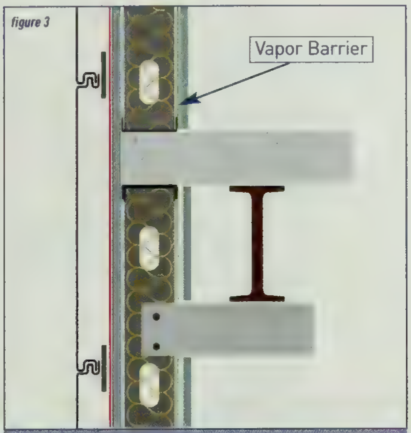
U.S. climatic zones map

isture Control Designs for Cold to Very Cold Climates

/ elements for controlling moisture in a typical multi-component wall assembly for cold nates (Figure 3) are:

- The vapor barrier-retarder: Airflow and vapor move from warm high pressure to cold lower pressures. In northern regions, winter is the critical time, when outside temperatures will average 8 degrees Fahrenheit, with a 20 percent RH and the interior ambient is 70 degrees Fahrenheit, with a 40 percent RH. Given these conditions, the dew point of the wall is 45 degrees Fahrenheit. If the vapor barrier-retarder were ineffective, vapors that enter the wall cavity would condense at a rate of as high as three pints of water per 100 square feet of wall area per week.

figure 3

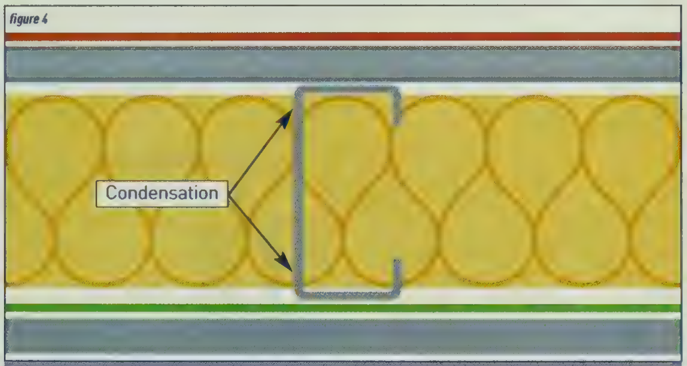


Section detail of a typical multi-component wall assembly for cold climate construction.

- Air and water barriers: An ineffective air barrier causing air leakage is considerably worse, because 80 pints of water could condense in the same one-week time frame. The comparison depicts how critical the air barrier is for moisture control.

Using the previous temperatures, consider the temperatures of the metal studs (Figure 4). These range from 17.5 degrees Fahrenheit on the exterior side to 37 degrees Fahrenheit on the interior. This is significant, indicating a problem with either the air or vapor barriers entering the cavity. Any surface that is below the dew point of 45 degrees Fahrenheit and in contact with the moisture laden air will cause condensation. Condensation in the cavity will cause corrosion of the stud and reduction in the thermal value of fiberglass insulation (Figure 4).

figure 4

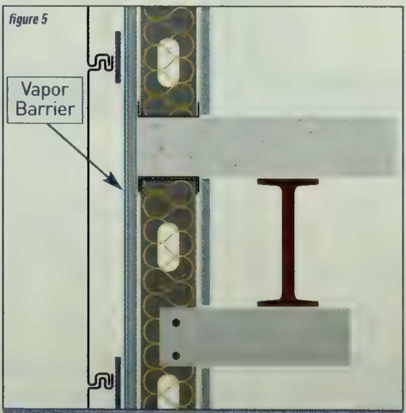


Plan detail of insulated metal stud wall and dew point issues that cause moisture condensation.

Moisture Control Designs for Hot and Humid Climates

In hot, humid southern climates, where moisture is a concern during the summer, the vapor barrier is installed at the exterior of the wall system (Figure 5). This layer is frequently a multipurpose material providing an air, water, and vapor barrier. Any breaks in this barrier will allow air and vapors to enter the cavity. The temperature of the metal studs can be below the dew point when adjacent to interior gypsum, and condensation will form, causing corrosion, along with insulation and gypsum board deterioration problems.

figure 5

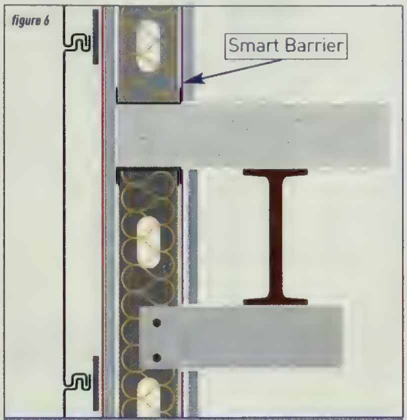


Section detail of typical warm climate multi-component wall system.

Moisture Control Designs for Moderate Zones

In moderate climate zones throughout the U.S., a "smart" vapor barrier is often installed in the wall system (Figure 6). It is typically located on the interior of the studs and has characteristics that allow variable amounts of air and water permeability. When installed correctly, the perm rating actually changes with the change of relative humidity. During the winter when RH is low, the perm rating is 1, and during the summer with high RH the perm rating changes to 10 (Figure 6, Centria #9).

figure 6



Section detail of typical moderate climate multi component wall system.

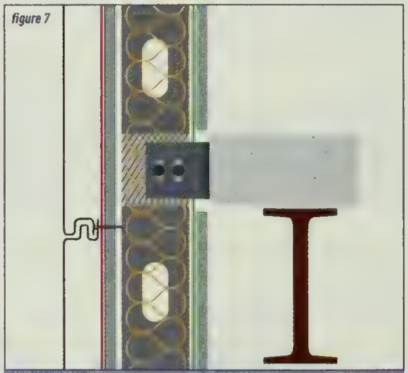
4. Multi Component Wall Systems

Multi-component wall systems are made up of numerous individual components that require careful design attention in order to avoid some common challenges related to thermal, moisture, and structural concerns. Typical components and concerns include:

Metal Studs

A major structural concern with the use of metal studs on a concrete floor slab is the deflection in the floor that can be transferred to the exterior wall system. This design can cause the deflection stresses to pass through the studs to the single most expensive element of the wall, the outer wall material. The solution is to move the studs outboard of the floor slab and use slotted connectors to handle the deflection (Figure 7). Not only is this is a better design, it is also a less expensive solution.

figure 7



Separating the metal studs from floor slab deflection.

Insulation

The second component is the thermal barrier, or insulation. Frequently fiberglass insulation is used in the cavity between the metal studs. While fiberglass has been tested to provide reliable thermal protection at a reasonable cost, there are concerns with its effectiveness when it is used in combination with metal studs, however. This has been documented in ASHRAE 90.1, which is the basis for many energy codes used in the U.S. (As of 2005, only 7 states do not reference this standard, while the other 43 states represent over 75 percent of the commercial construction in the U.S.) ASHRAE 90.1 requires reductions in the calculated value of the insulation by using "correction factors" (Figure 8). Note that a six-inch stud, filled with fiberg ss insulation, at 16-inch centers has a theoretical R-value of R-21 but is seve ly reduced to only a value of R-7.4. The reason for the reduction is based on the ther al conductivity of the metal studs and the net effect on the overall heat transfer of e wall system.

figure 8

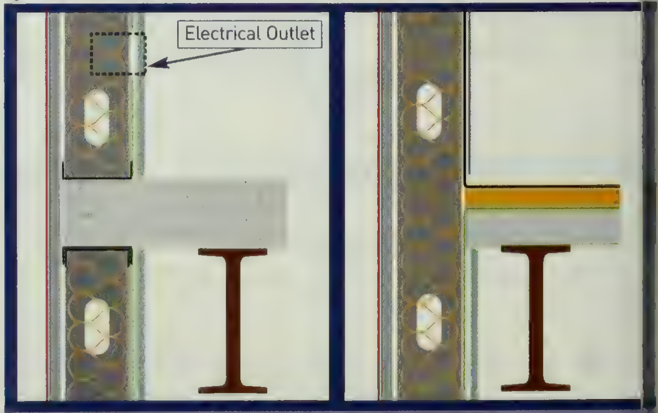
Nominal Framing Depth	Nominal Insulation R-Value	X	Correction Factor	=	Effecti R-Val
4" @ 16" O.C.	R-15	X	0.43	=	R-6.
4" @ 24" O.C.	R-15	X	0.52	=	R-7.
6" @ 16" O.C.	R-21	X	0.35	=	R-7.
6" @ 24" O.C.	R-21	X	0.43	=	R-9.

ASHRAE 90.1 correction factors for metal stud walls.

Vapor Barrier–Retarders

This component of the wall system is climate dependent with stud cavity insulat n. In cold climates, it is located on the interior of the metal studs. A key to g d performance of a vapor barrier-retarder is continuity of the material, so as to a id gaps or breaches. Challenges in maintaining this continuity occur at floor sl s, behind spandrel beams, at electrical box penetrations, and at the roof and ll intersection at parapets (Figure 9) . The condition at the parapet is critical becau it relies on coordinating wall and roofing contractors to maintain vapor ba er continuity. Electrical distribution is a challenge because frequently it is done in e stud cavity. Hence, at every electrical box, the vapor barrier is penetrated, causi a breach in the vapor barrier continuity.

figure 9



Typical problems with vapor barrier-retarder continuity.

Exterior Gypsum Sheathing

Exterior grade gypsum sheathing is applied to the exterior side of the metal st s. There are advantages and challenges with this type of installation. Advanta s include quick enclosure of the building, fire resistance, and the creation of a continuous surface to apply building wraps. Challenges associated with the gypsum sheathing material include the necessary penetrations to secure the outer material or cladding attachments, and the resulting exposure of the gypsum core to moisture.

Vapor-Permeable Air and Water Barrier In Cold Climates

Applied over the sheathing is a vapor-permeable air and water barrier or retarder, usually made of woven manufactured product. As a moisture retarder, it allows vapors to penetrate the interior stud space cavity to pass through into the outer drainage cavity. At the same time, it acts as a barrier to both air and liquid water coming from the outside. Hence, it must be fastened properly to withstand the imposed air or water that it may be subjected to but also provide continuity to maintain its integrity and effectiveness. Critical to good performance, all joints must be properly taped and secured with particular attention to detail at the window and door heads, sills, and jambs.

Drainage Cavity

The outer material is often referred to as a rainscreen, particularly if it is a metal material that is not intended to be airtight and is primarily intended to be the weathering surface that screens the rest of the wall system from rain and other elements. It may be attached in various ways that penetrate through the air and water barrier and gypsum sheathing into the studs. The space created between the rainscreen and the barrier-covered sheathing is called the drainage cavity. It must have enough space for moisture to properly drain out and still accomplish air pressure equalization, which is important in windy conditions. The drainage cavity is sometimes divided into compartments that help maintain pressure equalization.

. Rainscreens

ie term rainscreens refers to the outer material in a wall system, usually when it is made it of metal cladding. There are several different metal cladding types:

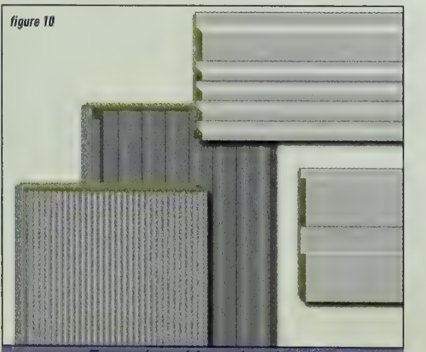
Single Skin or Roll-Formed units.

This common type of metal cladding has very desirable design characteristics. These materials provide variations in texture from light striations to bold ribs, which can provide light or bold textures. They can also be installed to run horizontally or vertically.

Foam Insulated units.

Metal cladding may also be an insulated composite (Figure 10) . Design characteristics of this metal cladding type include high-performance pressure equalized joinery, and the ability of the units to be curved to various radii. They also can be installed in horizontal or vertical applications, using both wide horizontal reveals and wide vertical reveals recessed to the same plane as a standard detail. They integrate easily with glass curtainwall and windows.

figure 10



Examples of foam insulated metal cladding units.

Thin Composite Metal Units

Thin metal composite walls consist of two layers of metal, with a composite core that is either formed or fabricated into a panel system. Some joinery systems have geometry that is a pressure-equalized rainscreen. These composite walls are created for superior flatness, wide modules, and grid look. Design characteristics include crisp sight lines, smooth curves, and a high-tech grid look.

Plate Systems

Plate systems are available in many types of designs. They generally are used on medium or high-rise construction.

Custom Wall Systems

Custom wall systems are almost limitless in what can be accomplished.

When comparing the different types of rainscreens, it is important to remember that they serve several important functions. Beyond providing an outward appearance and wearing surface, they allow a wall system to drain liquid and to vent water vapor from external leakage, internal vapor diffusion or internal air leakage. In general, rainscreens allow ventilation behind the metal to help eliminate moisture in the drainage cavity. In a 1988 publication entitled, "Rainscreen Cladding, a Guide to Design Principles and Practice," by Anderson and Gill, two types of rainscreens are defined, backside ventilated, and pressure equalized.

When comparing the different types of rainscreens, it is important to remember that they serve several important functions.

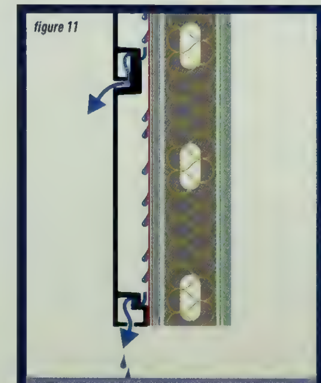
Backside-Ventilated Rainscreens

According to the authors, "back-ventilated...claddings are allowed to leak, and no deliberate attempt is made to minimize the effects of wind by means of pressure equalization...large quantities of rainwater penetrate the joints and run down the reverse, hidden face of the cladding assembly."

Pressure Equalized

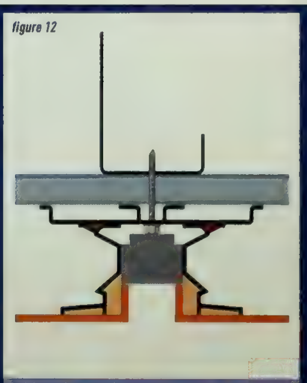
The second type of rainscreen is a pressure-equalized system. Joseph Lstiburek, Ph.D, P.Eng., principal of the Building Science Corporation, has studied wall systems in considerable depth. He describes the most effective wall system as one that prevents water from entering the wall cavity and wetting the inner layers, while

figure 11



Section view of back ventilated cladding that allows water to leak out of drainage cavity.

figure 12



Plan view of rear sealed vertical joints.

allowing air to enter and ventilate the cavity. Proper design of the horizontal joint and the air barrier in a pressure equalized rainscreen provides what Lstiburek indicates is excellent performance, that being horizontal joints that keep water out, while permitting air to enter and help dry the cavity (Figure 11) . The vertical joints in this system are continuously rear sealed, creating closed vertical compartments in the metal cladding that help maintain pressure equalization (Figure 12). This is critical for high-wind areas and at the corners of buildings.

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at ***http://archrecord.construction.com/resources/conteduc/archives/0601centria-1.asp*** To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, call Rick Brow, Director of Marketing - CENTRIA - rbrow@centria.com

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Describe thermal and moisture control performance for exterior metal walls.*
- *Define the components of an exterior wall system assembly.*
- *Analyze how different climates affect design of exterior wall systems.*
- *Review the advantages of using rainscreens in building design.*
- *Evaluate design criteria for superior performance exterior wall systems.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 224. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self report form on *Record's* web site—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. Which items listed are issues associated with the design of the building envelope?
   a. Energy costs in the early 1970s led to the design of building envelopes that were more energy efficient and airtight.
   b. Relative humidity levels in occupied buildings are frequently around 40 percent.
   c. Energy code changes require higher R-values for exterior walls.
   d. All of the above

2. Key elements for controlling moisture in a cold or very cold climate multi-component wall are:
   a. The vapor barrier–retarder.
   b. Air and water barriers.
   c. Type and location of the insulation.
   d. All of the above.

3. The major design concerns to consider when using studs and mounting them on the floor are:
   a. The deflection in the floor is transferred to the outer wall element.
   b. The design causes the single most expensive element of the wall to handle this deflection.
   c. A six-inch stud, filled with fiberglass insulation, at 16-inch centers has a theoretical R-value of R-21 but actually delivers only an R-value of R- 7.4.
   d. A and B only.

4. Mold is a major concern in multi-component walls. The three elements required for mold to grow are:
   a. Water, moderate temperature, food source
   b. Water, very cold temperature, food source
   c. Water, arid temperature, food source
   d. None of the above.

5. The advantages of rainscreens in the wall system are:
   a. Rainscreens allow a wall system to drain liquid and to vent vapor.
   b. Rainscreens do not maintain pressure equalization.
   c. Rainscreens allow backside ventilation to help eliminate moisture.
   d. A and C.

6. Surface sealed (wet sealed) metal systems are popular but are questionabl as rainscreens because;
   a. They have minimal venting.
   b. Can also act as a second vapor barrier.
   c. Rely on perfect installation.
   d. All of the above.

7. A superior performance wall system:
   a. Functions in all climatic conditions.
   b. Does not have an ASHRAE rated insulation R value.
   c. Does not have a contained air space working as a pressure equalizatio chamber.
   d. Relies on a multi-component system with numerous separate air, wate and vapor barriers over insulated metal studs.

8. Sustainable building design includes materials that exhibit which of the following?
   a. Recyclability
   b. Thermal efficiency
   c. Durability
   d. All of the above.

9. Building material factors to consider during the design phase are the rainscreen, window selection, and insulation.
   a. True
   b. False

10. For the wall system to be sustainable, durability must minimize potential for water-related damages.
A. True
B. False

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ir Barriers: Increasing Building Performance, ecreasing Energy Costs

ovided by DuPont Tyvek

The Metropolitan Club at Hotel ZaZa.
It is located at 2403 Thomas Ave., Dallas, TX.

Controlling air leakage is an important factor in maintaining a building's energy efficiency. According to the United States Department of Energy, some 40 percent of the energy of ating and cooling a building is lost by uncontrolled air leakage rough the building enclosure. As a result, North American ergy codes have started to address airtight qualities in ildings. Uncontrolled air leakage could have consequences yond increased energy consumption, regarding health and fety of the building occupants, as well as premature terioration of building materials.

is article will focus on air barrier membranes, which are aterials specifically designed to control airflow. Lightweight, yet rong, air barrier membranes can control unwanted air leakage and create an airtight building, while enhancing the comfort of interior environments, building envelope durability, and energy efficiency in a way that's cost effective and visually unobtrusive. And the payoff in energy savings can be significant. A 2005 National Institute of Standards and Technology (NIST) study indicates that an air barrier system could reduce air leakage by up to 85 percent, and realize a 40 percent savings in natural gas, and a 25 percent savings in electricity.

Lightweight, yet strong, air barrier membranes can control unwanted air leakage and create an airtight building, while enhancing the comfort of interior environments, building envelope durability, and energy efficiency in a way that's cost effective and visually unobtrusive. And the payoff in energy savings can be significant.

The energy implications of air barriers are significant," says Peter J. Arsenault, AIA, NCARB, EED-AP, principal of Peter J. Arsenault Architect in Syracuse, New York. "Air infiltration in building can account for a nearly equal degree of energy loss as insulation values. In other ords, R-values and insulation details account for about half of the heating and cooling nergy use in a building. The other half is lost to air infiltration. Tests have shown a ignificant decrease in air infiltration with proper installation of air barriers."

ODES AND LEGISLATION RELATING TO AIR BARRIERS

ir barrier systems provide several advantages for building projects, including increased nterior comfort, durability and energy efficiency. With these attributes, they are suitable or a variety of applications in various climates.

ir barriers have the potential to reduce air leakage to acceptable levels for less than 1.50/square foot of gross building area, and are often specified for buildings. Air barriers re typically regulated through energy codes, which recognize the importance of airtight uildings and energy efficiency. As of early 2006, several states have developed existing and ending legislation on air barriers, as well as compliance criteria.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Air Barriers: Increasing Building Performance, Decreasing Energy Costs.** To earn one AIA/CES Learning Unit, including one hour of health, safety, welfare credit, answer the questions on page 211, then follow the reporting instructions on page 224 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Explain recent trends in air barriers for buildings.*
- *Understand the physics of air and moisture movement through the building enclosure.*
- *Discuss air barrier functions, benefits and performance requirements.*
- *Select the appropriate air barrier for building projects.*

Summary of Existing and Proposed Energy Codes

Codes & Regulations	Compliance Requirements Air Infiltration, cfm/ft2 @ 0.30 in water (75Pa)		
	Material ASTM E2178	Assembly ASTM E1677	Whole Bldg. ASTM E779
The National Building Code of Canada (1995 NBC)	0.004	--	--
Massachusetts Energy Code (July 2001)	0.004	--	--
WI Energy Code	--	0.06	--
MN Energy Code (Proposal)	0.004	--	--
ASHRAE 90.1* (Proposal approved 2005)	0.004	0.04	0.4

* ASHRAE proposal has 3 compliance options: Material, Assembly, or Whole Building.
Summary of existing and proposed energy codes

The 1995 National Building Code of Canada (NBC code) requires a continuous air barrier for all commercial buildings. Massachusetts was the first state to adopt an energy code, in 2001, which is similar to the NBC code, and requires a continuous air barrier for commercial buildings. Wisconsin adopted an energy code in 2003. Minnesota is developing an energy code in early 2006, with similar compliance criteria as the Massachusetts energy code. In addition, as of 2003, the Envelope Design Guidelines for Federal Office Buildings and Multi-Family High Rise Residential Buildings require air barriers.

As air barriers are better understood and the benefits are documented, more jurisdictions will likely be following suit. In 2005, the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) approved an amendment to the ASHRAE 90.1 model energy code that would require an air barrier for most commercial buildings in most climate zones. With their clear advantages and the imminent code requirements, it's critical that architects understand the air barrier functions and benefits, and how to specify them.

THE PHYSICS OF AIR AND MOISTURE TRANSPORT THROUGH THE BUILDING ENCLOSURE

To gain a proper working understanding of the role of air barriers in building enclosures, some basic terminology and fundamental physics must first be defined. The building enclosure, also known as the building envelope, refers to the part of the building that physically separates the interior conditioned space from the exterior environment. Its main function is to control all loadings due to separation of the two environments, the flow of mass and flow of energy. Air barriers are an important component of the building enclosure.

Air Leakage

Air leakage through the building enclosure refers to the unplanned, unpredictable, and unintentional airflow in or out of buildings, and must be distinguished from the intentional and, ideally, controlled flow of outdoor air into a building via either a mechanical or a ventilation system. A building can be very tight in terms of air leakage and have sufficient ventilation; conversely, a building could be very leaky and have insufficient ventilation. In mechanically ventilated buildings, it is desirable to have an airtight building enclosure, which is achieved by connecting materials with high air infiltration resistance into a continuous air barrier system.

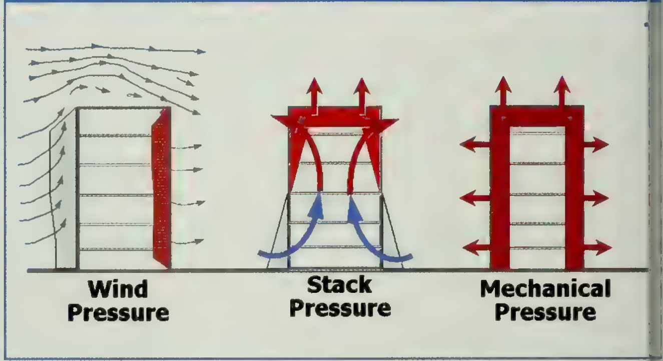
In order for air leakage to occur, there must be a driving force and a pathway. The driving force for air leakage is the difference in total air pressure across the building enclosure, with airflow occurring from higher to lower pressure, or from positive to negative pressure. There are three main sources of air pressure difference.

The wind pressure is a significant factor and it is usually high (positive) on the windward side, and low (negative) on the leeward side of the building. When averaged over the course of a year, industry experts estimate that wind pressure is about 10 to 15 miles per hour (0.2 to 0.3 pounds per square foot) in most locations in North America.

Stack pressure (also called chimney effect or buoyancy) is caused by the atmosph ic pressure difference between the top and bottom of a building, which is in turn cause y the temperature difference and hence the difference in the weight of the columns of in r and outdoor air. In cold climates, during winter, the stack effect can cause infiltratio cold air at the bottom and exfiltration of warmer air at the top of the building. The reve e occurs in summer, with air conditioning.

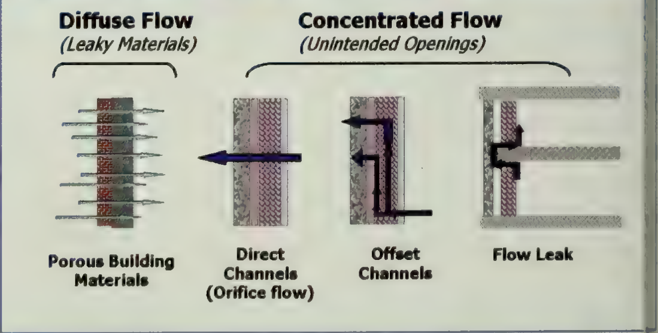
Mechanical pressure is caused by heating, ventilation and air conditioning (HVAC) sys pressurization. HVAC engineers tend to design buildings with slight positive pressure order to reduce infiltration and associated pollution. However, this practice might no e ideal in some climates, such as in cold climates.

Main Sources of Air Pressure Differentials in Buildings



The main types of airflow pathways include diffuse flow and concentrated pathw s. Diffuse flow occurs through leaky materials and assemblies, such as fibrous insulat , uncoated masonry (such as concrete masonry units and brick), or other porous buil g materials. Concentrated flow occurs through unintended openings. Direct channel flo r orifice flow, which occurs when the air enters and exits in a direct path, has the high t cost penalty because of high energy loss. Offset channel leaks are the most damag g because of longer pathways, which allow for air to change its temperature and to reach e dew point within the building enclosure leading to interstitial condensation. Flow le s occur between floors and could add to stack effect.

Air Flow Pathways



Moisture Transport

Moisture moves through the building enclosure as liquid water or as water vapors. e difference between the two physical states of water is the size of the molecular aggrega : liquid water exists as large molecular aggregates (up to 100 molecules at r temperature), while water vapors exist as free molecules. Consequently, the transp t mechanisms are different for liquid water and water vapors.

iid water
main source of liquid water for above grade walls is rain, which can infiltrate behind the rior cladding and be driven into the building enclosure by four main forces:

ity can draw water down through openings and cracks, and into the construction assembly.

illary forces act like a sponge sucking water through small cracks and pores. Smaller ks result in greater capillary forces.

ı droplets can pass through openings in the exterior cladding, driven by the momentum illing rain drops.

pressure differential can push or suck water through openings and cracks, into the struction assembly.

e are three basic types of exterior wall design, from the standpoint of rain penetration control.

- Face-sealed (barrier) walls rely upon every seam and crack to be face sealed. This design requires detailed workmanship and continuous maintenance, and is most vulnerable to rain infiltration. This design is effective only in areas with low wind and rain exposure. Examples of barrier walls include non-drainage Exterior Insulation Finish Systems (EIFS) and face-sealed curtain walls.
- Concealed barrier walls rely on multiple layers for rain penetration control. In contrast to face-sealed systems, these walls include a drainage plane within the wall assembly that functions as a second line of defense against water intrusion. The drainage plane is usually a water resistive barrier membrane. This design is effective in areas with moderate wind and rain exposure. A typical example of a concealed barrier wall is the drainage stucco system.
- Drained cavity or rain screen walls rely on two layers and a drained cavity space for rain penetration control. This design is similar to the concealed barrier system in that it provides two lines of defense, but it offers additional features, such as capillary breaks between porous materials, freer drainage, and venting or ventilation to limit average relative humidity (RH)) outside of sheathing. This design is most effective in rain penetration control and should be used in areas with high wind and rain exposure. Examples of rain screen walls include brick-veneer cavity walls, furred-out clapboard walls, and drainable EIFS walls.

ter vapor can be transported through the building enclosure by air currents and by vapor usion. Air currents could carry significant amount of moisture vapors into the building losure. A continuous air barrier will control airflow, hence the moisture migration through currents. Air-transported moisture must not be confused with vapor diffusion.

water vapor diffusion to occur there has to be a driving force and a pathway. The driving ce for water vapor diffusion is the difference in water vapor concentration or difference in oor pressure across an assembly: water vapors flow from an area of higher concentration gher vapor pressure) to an area of lower concentration (lower vapor pressure). The ability materials to allow vapor diffusion is measured by vapor permeability, which is expressed perms: the higher the perms, the higher the vapor permeability.

e 2003 International Building Code (IBC) classifies building materials into vapor meable (greater than five perms) and vapor non-permeable (less than one perm). Vapor n-permeable materials are called vapor barriers or vapor retarders. Other terms often ed to describe vapor permeable or non-permeable materials are "breathable" and "non-athable," respectively.

eathability is often associated with air flow, rather than moisture vapor flow," notes iria Spinu, Ph.D., Building Science Manager, Dupont Building Innovation. "The use of this minology may have contributed to the confusion between an air barrier versus a vapor rrier function." While the two functions could be performed by a single material, providing air and vapor barrier, the needs addressed are quite different. Air barriers retard airflow, ich is the result of air pressure differences. Vapor barriers retard water vapor flow, which the result of water vapor concentration differences.

Experts estimate that the amount of moisture vapor transported by air currents can be 100 to 200 times higher than the amount transported by vapor diffusion, and can account for more than 98 percent of all water vapor movement through the building enclosure.

In summary, there are three main moisture sources, which could lead to water problems in buildings: bulk water, air transported moisture, and vapor diffusion. "The three moisture sources do not contribute equally to the wetting of the building enclosure," says Spinu. Liquid or bulk water infiltration is usually the largest wetting source for above-grade walls, followed by air transported moisture, which is significantly higher than the amount of water vapor transported by diffusion. It is generally accepted that the buildings will occasionally get wet; however, moisture problems in buildings will occur if wetting exceeds drying. Consequently, in order to prevent moisture problems it is essential to protect the enclosure against wetting and promote drying. Although moisture movement by diffusion cannot be discounted as a wetting source, it should not be the primary focus for moisture intrusion control; vapor diffusion, however, is critical for drying.

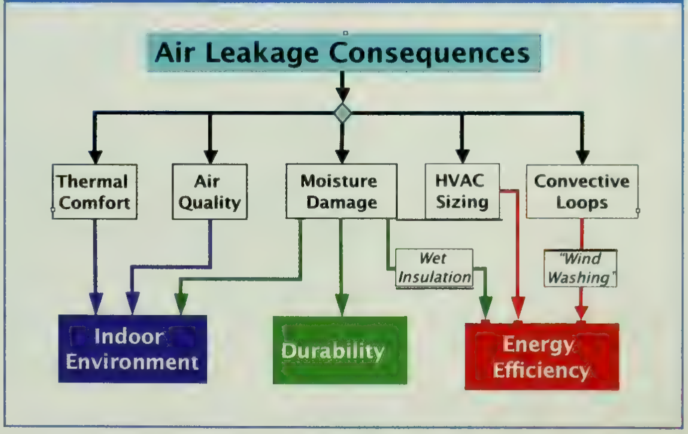
> *Experts estimate that the amount of moisture vapor transported by air currents can be 100 to 200 times higher than the amount transported by vapor diffusion, and can account for more than 98 percent of all water vapor movement through the building enclosure.*

AIR BARRIER FUNCTIONS AND BENEFITS

Uncontrolled air leakage could negatively impact building occupant comfort, durability of building materials, and energy consumption levels. Air barriers play a critical role in controlling these effects of air leakage.

The primary function of an air barrier is to control air leakage in order to avoid undesirable consequences.

Consequences of Air Leakage through the Building Enclosure



Air movement can create drafts affecting thermal comfort, or carry contaminants and moisture through the building enclosure, affecting indoor air quality and safety of the occupants. Excess moisture can also condense on interior surfaces and cause premature degradation of building materials, such as corrosion of metal and rotting of wood. Unintentional air leakage could lead to increased energy use in at least three different ways: over sizing of HVAC equipment to compensate for the heating and cooling loss through air leakage; loss of effective R-value due to wetting of thermal insulation by moisture transported through air currents; and loss of effective R-value due to convective loops, also known as the wind-washing effect.

In addition to their primary function, air barriers can protect against water intrusion, in which case they are air and water resistive barriers. Some air barriers also control vapor diffusion, in which case they are air and vapor barriers. Air, water and vapor barriers play a critical role in managing air and moisture movement through the building enclosure. "Unfortunately, there is still confusion on the functionality associated with different barrier membranes, especially when a single membrane performs multiple functions," says Spinu, noting that the most common confusion is between air barrier and vapor barrier functions. "While air barriers can and should be used in all climates, vapor barriers are climate specific," she adds.

AIR BARRIER PERFORMANCE REQUIREMENTS

There are four main performance requirements for air barriers: air infiltration resistance, continuity, structural integrity, and durability.

Air infiltration resistance: An air barrier must resist airflow. While there are no mandatory requirements at the national level, individual states have adopted energy conservation codes that require air tightness and allow for different compliance options for air infiltration resistance of air barrier materials, assemblies, or whole buildings (as previously described).

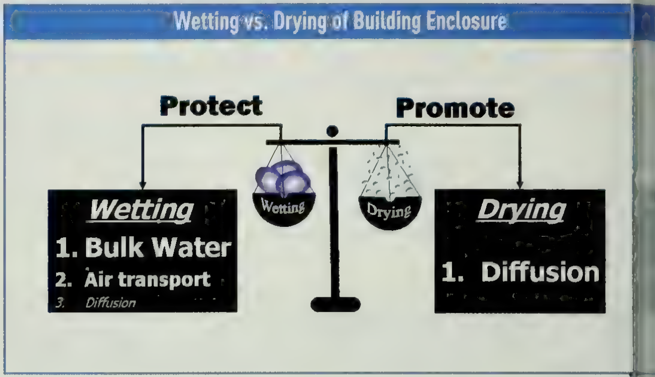
> *Uncontrolled air leakage could negatively impact building occupant comfort, durability of building materials, and energy consumption levels. Air barriers play a critical role in controlling these effects of air leakage.*

Continuity is a critical requirement for air barriers, and depends on both design and execution. The first step is to detail the air barrier continuity in the drawings. "A continuous line of air tightness must be traced through every exterior wall detail, and every connection between air barrier components," says Spinu. The most critical connections include: the roof and wall; wall and foundation; wall and floors; wall and window or door interfaces; joints between various types of exterior wall systems, and penetration details. The design details must then be properly implemented in the field. The air barrier system includes the primary air barrier membranes and the installation and continuity accessories, such as mechanical fasteners, tapes, flashing, caulks, sealants, and primers.

Structural integrity is another attribute of an effective air barrier. Air barriers must be able to withstand pressure loads or be able to transfer the load to other elements of the building envelope without rupture or displacement. For mechanically fastened building wraps, the type of mechanical fasteners and their spacing are important for structural integrity, and the installation must be done according to the manufacturer's instructions.

Finally, air barriers must be durable. They must be able to withstand environmental exposure, including exposure to ultraviolet (UV) rays, thermal cycles, and mechanical pressure. These requirements extend from the construction cycle through the service life of the enclosure. If that life-cycle requirement can't be met, then an air barrier must be accessible for periodic maintenance.

In addition to these basic requirements, an air barrier membrane should also balance the critical barrier properties for optimum moisture management: air infiltration resistance, water resistance, and vapor permeability. The air barrier membrane should combine high resistance to water penetration and air infiltration (to protect against bulk water intrusion and moisture transported by air currents, respectively), with optimum moisture vapor permeability to allow drying from incidental moisture. The balance of properties is generally difficult to achieve, because the three barrier properties have competing demands. Consequently, only few materials achieve this optimum balance, while most excel in one or two categories.



The multiple consequences of uncontrolled airflow may result in potential liability issues for the entire building community. Architects, consultants, and engineers could be held liable for moisture damage in buildings because of faulty design or poor material selection. Contractors' workmanship can be called into question when water damage is due to poor execution of the intended design or unauthorized material substitution. Building owners may be held responsible for poor indoor air quality, mold problems or lack of thermal comfort. With serious consequences for the design and building industry professionals, building owners and building users, it behooves all members of the building team to pay close attention to controlling unwanted air flow and selecting the proper barrier method.

SELECTING APPROPRIATE AIR BARRIERS

There are many types of commercial air barrier membranes. Based on the method of application, there are three main types of air barriers: mechanically fastened (building wraps); peel-and-stick or self-adhered; and fluid applied. Based on vapor permeability, air barrier materials are vapor permeable and vapor non-permeable. Mechanically fastened membranes are vapor permeable; some fluid applied membranes have limited vapor permeability; all others are vapor non-permeable. While the application method is often a personal preference, the vapor permeability of air barrier membranes has performance implications, which must be considered when selecting an air barrier. As a general rule, vapor permeable air barriers can and should be used in all climates, while vapor non-permeable air barriers (air and vapor barriers) are climate specific. ■

CLICK FOR ADDITIONAL REQUIRED READING

e article continues online at ***http://archrecord.construction.com/resources/conteduc/archives/0601duponttyvek-1.asp.*** To receive AIA/CES credit, you are required to read this additional text. e quiz questions below include information from this online reading. To receive a faxed copy of the material, call DuPont™ Tyvek®: 1-800-448-9835, Prompt #1 or E-mail: tyvek.construction@usa.dupont.com.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

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- *Explain recent trends in air barriers for buildings.*
- *Understand the physics of air and moisture movement through the building enclosure.*
- *Discuss air barrier functions, benefits and performance requirements.*
- *Select the appropriate air barrier for building projects.*

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QUESTIONS

1 The driving force for air leakage is:
  a. The difference in total air pressure across a building assembly, with airflow occurring from positive to negative pressure.
  b. The difference in total air pressure across a building assembly, with airflow occurring from negative to positive pressure.
  c. Stack Pressure
  d. Leaky materials in the building envelope

2. What is the driving force for vapor diffusion:
  a. The difference in the total air pressure between the interior and exterior of the building.
  b. The difference in water vapor concentration or difference in vapor pressure across an assembly.
  c. The difference in atmospheric pressure at the top and bottom of a building due to difference in temperature.
  d. Water intrusion into a building

3. What is the largest wetting source for above grade walls:
  a. Air transported moisture
  b. Vapor diffusion
  c. Liquid or bulk water infiltration
  d. Uncontrolled air flow

4. What is the primary function of an air barrier?
  a. Water resistance
  b. Vapor resistance
  c. To prevent air leaking through porous materials
  d. To control air leakage

5. An additional air barrier function is:
  a. Controlling air flow
  b. Protecting water intrusion
  c. Preventing mold growth
  d. Eliminating pollutants

6. Air barrier requirements include:
  a. Ability to withstand pressure loads or be able to transfer the load
  b. Durability
  c. Continuity
  d. All of the above

7. An effective air barrier should have:
  a. High resistance to liquid water penetration
  b. High resistance to air infiltration
  c. Optimum moisture vapor permeability
  d. A balance of critical properties

8. A key consideration when selecting an air barrier system for a building enclosure is:
  a. Vapor transmission
  b. Climate
  c. Sustainability
  d. Site design

9. What type of air barrier can and should be used in all climates and all wall designs?
  a. Vapor non-permeable
  b. Vapor permeable
  c. Mechanically fastened
  d. Self-adhered

10. Vapor non-permeable air barriers must be located:
  a. On the cold side of the thermal insulation
  b. On the warm side of the thermal insulation
  c. Anywhere in the wall assembly
  d. None of the above

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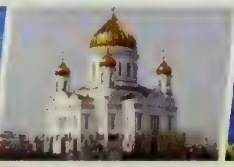

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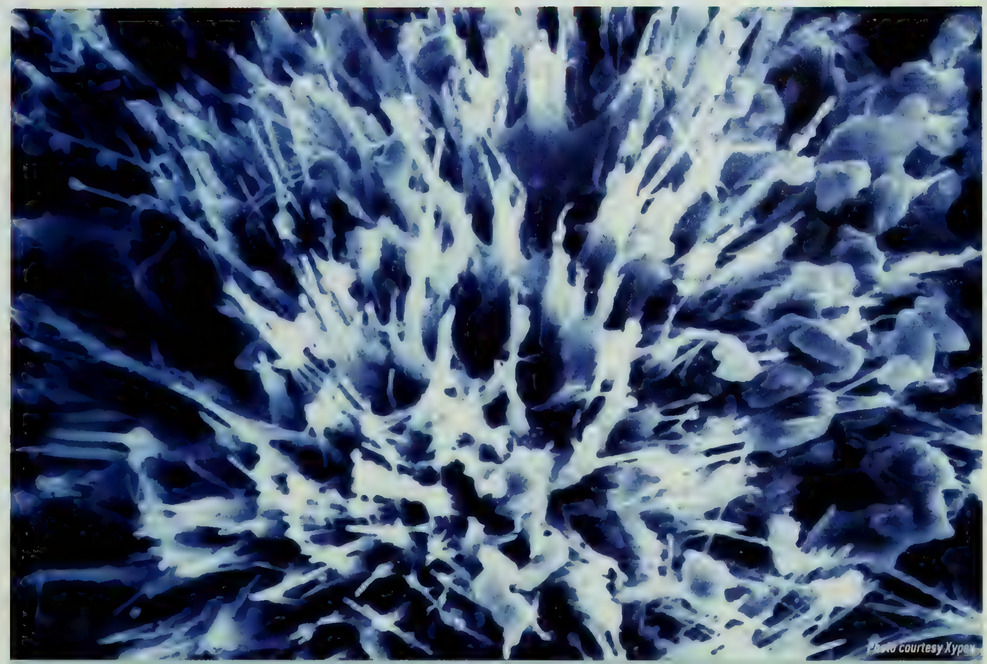


Photo courtesy Xypex

rom foundations, floor slabs and exterior pre-cast panels, to water treatment facilities and underground urban infrastructure, concrete is of the most commonly used building and struction materials. However, due to its position, a mixture of rock, sand, cement, and r, concrete is often susceptible to damage and rioration from water and chemical penetration.

se deleterious effects can be avoided through use of crystalline waterproofing technology, ch effectively improves the durability and lifespan of concrete structures, thereby reducing long-term maintenance costs. This article explores how crystalline technology provides a high level of performance to concrete mixtures, materials, and structures, and what design professionals need to know in order to specify and understand how this chemical technology will enhance building projects.

ONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Concrete Waterproofing with Crystalline Technology.** To earn one AIA/CES Learning nit, including one hour of health, safety, welfare credit, answer e questions on page 217, then follow the reporting instructions n page 225 or go to the Continuing Education section on *hrecord.construction.com* and follow the reporting instructions.

EARNING OBJECTIVES

fter reading this article, you should be able to:

Understand how crystalline technology works with concrete to provide high performance waterproofing qualities.

Explain the difference between porosity, permeability and the mechanics by which water is absorbed through concrete structures.

Discuss how crystalline waterproofing technology improves the durability of concrete structures and reduces maintenance.

Identify appropriate crystalline technology product applications for various types of concrete construction.

Analyze how crystalline technology admixtures can impact building life cycle and project construction costs.

Due to its composition, a mixture of rock, sand, cement, and water, concrete is often susceptible to damage and deterioration from water and chemical penetration.

The Nature of Concrete

The aggregate base of a concrete mixture is formed by rock and sand. This cement and water mixture creates a paste that binds the aggregates together. As the cement particles hydrate, or combine with water, they form calcium silicate hydrates. The mixture then hardens into a solid, rock-like mass.

Concrete is also a water-based product. To make this mixture workable, easy to place, and consolidate, more water than is necessary for the hydration of the cement is used. This extra water, known as the water of convenience, will bleed out of the concrete, leaving behind pores and capillary tracts. Although concrete appears to be a solid material, it is both porous and permeable.

Concrete is both porous and permeable.

Water reducers and superplasticizers are used to reduce the amount of water in the concrete mix, and maintain its workability. However, pores, voids, and capillary paths will remain in cured concrete and can carry water and aggressive chemicals into structural elements that will corrode steel reinforcement and deteriorate concrete, thus jeopardizing the structure's integrity.

The Porous and Permeable Nature of Concrete

Concrete is best described as a porous and permeable material. Porosity refers to the amount of holes or voids left in concrete, is expressed as a percentage of the total volume of a material. Permeability is an expression of how well the voids are connected. Together, these qualities allow pathways to form that allow the movement of water into, and through, along with the cracking that occurs due to shrinkage.

Permeability, a broader term than porosity, is the ability of liquid water under pressure to flow through porous material. Permeability is described by a quantity known as the permeability coefficient, commonly referred to as D'Arcy's Coefficient. The water permeability of a concrete mix is a good indicator of the quality of the concrete for durability reasons. The lower D'Arcy's Coefficient, that is, the more impervious, the higher the quality of the material. Nevertheless, a concrete with low permeability may be relatively durable but may still need a waterproofing agent to prevent leakage through cracks.

Despite its apparent density, concrete remains a porous and permeable material that can leak and deteriorate rapidly when in contact with water or the intrusion of aggressive chemicals, such as carbon dioxide, carbon monoxide, chlorides, sulfates or other substances. But there are other ways in which water can be transported through concrete.

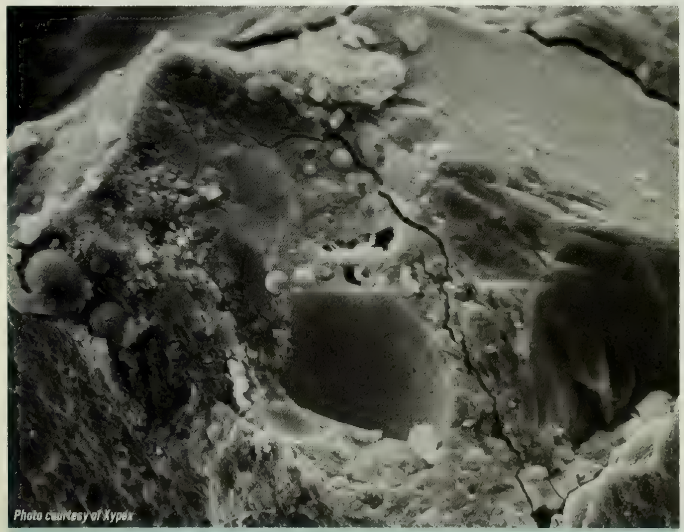


Photo courtesy of Xypex

Magnified view of microcrack.

Vapor Flow and Relative Humidity

Water also migrates in the form of water vapor as relative humidity. Relative humidity is water held in air as a dissolved gas. As water vapor heats up, it contains more water and exerts vapor pressure. Water can also be transported through concrete as vapor. The direction of flow travels from high vapor pressure, generally the source, to low vapor pressure, by a process of diffusion. The direction of flow could vary based on environmental conditions.

The direction of vapor flow is critical when applying waterproofing treatment in situations where an unbalanced vapor pressure gradient exists. Typical examples include:

- Applying a low vapor permeable membrane, such as a traffic deck coating over a wet concrete surface (even if the very top surface is dry) on a warm day will result in premature vapor pressure build-up and pin-holing or blistering.
- Applying a coating or sealant to the outside of a building wall may trap moisture in the wall if the sealant is not sufficiently vapor permeable.
- Applying low vapor permeable flooring over a slab-on-grade where there is high subsurface moisture content may result in delamination of the flooring.

Generally, a low vapor permeable sealant or coating should not be placed on the downstream face of a building or structure. Either the vapor pressure or water pressure will act to damage and blister the membrane. Some types of coatings and water permeability reducing admixtures in the concrete accommodate considerable vapor movement, thus allowing them to be placed successfully on the downstream side. Primary examples are cement-based waterproof coatings and water permeability reducing admixtures.

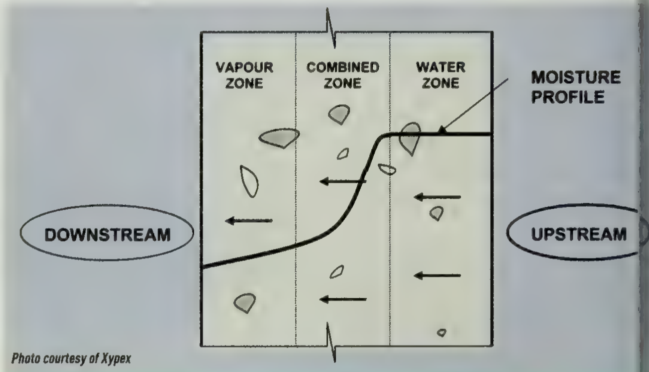


Photo courtesy of Xypex

Vapor flow through a foundation wall.

How Crystalline Waterproofing Technology Works

Crystalline technology improves the durability and performance of concrete structures, lowering their maintenance cost and extending their lifespan by protecting them against the effect of aggressive chemicals. These high performance qualities result from the way in which the crystalline technology works, when used with concrete.

Crystalline technology improves the durability and performance of concrete structures, lowering their maintenance cost and extending their lifespan by protecting them against the effect of aggressive chemicals.

Crystalline waterproofing technology improves the waterproofing and durability of concrete by filling and plugging pores, capillaries, micro-cracks, and other voids with a non-soluble, highly resistant crystalline formation. The waterproofing effect is based on two simple reactions, one chemical and one physical. Concrete is chemical in nature. When a cement particle hydrates, the reaction between water and the cement causes it to become a hard, solid mass. The reaction also generates chemical by-products that lie dormant in the concrete.

Crystalline waterproofing adds another set of chemicals to the mixture. When these two chemical groups, the by products of cement hydration and the crystalline

rystalline technology improves the waterproofing and rability of concrete by ling voids with a non- luble, highly resistant rystalline formation.

chemicals, are brought together in the presence of moisture, a chemical reaction occurs. The end product of this reaction is a non soluble crystalline structure.

This crystalline structure can only occur where moisture is present, and thus will form in the pores, capillary tracts, and shrinkage cracks in concrete. Wherever water goes, crystalline waterproofing will form filling the pore, voids and cracks.

en crystalline waterproofing is applied to the surface, either as a coating or as a dry- ke application to a fresh concrete slab, a process called chemical diffusion takes place. theory behind diffusion is that a solution of high density will migrate through a solution ower density until the two equalize.

s, when concrete is saturated with water prior to applying crystalline waterproofing, a tion of low chemical density is also being applied. When crystalline waterproofing is lied to the concrete, a solution of high chemical density is created at the surface, gering the process of chemical diffusion. The crystalline waterproofing chemicals must rate through the water (the solution of low density) until the two solutions equalize.

crystalline waterproofing chemicals spread through the concrete and become available the byproducts of cement hydration, allowing the chemical reaction to take place. A stalline structure is formed, and as the chemicals continue to migrate through the water, crystalline growth will form behind this advancing front of chemicals. The reaction will tinue until the crystalline chemicals are either depleted or run out of water. Chemical usion will take these chemicals about 12 inches into the concrete. If water has only ked two inches into the surface, then the crystalline chemicals will only travel two hes and stop but, they still have the potential to travel 10 inches further, if water re ers the concrete at some point in the future and reactivates the chemicals.

tead of reducing the porosity of concrete, like water reducers, plasticizers, and erplasticizers, the crystalline formation engages the material filling and plugging the ds in concrete to become an integral and permanent part of the structure.

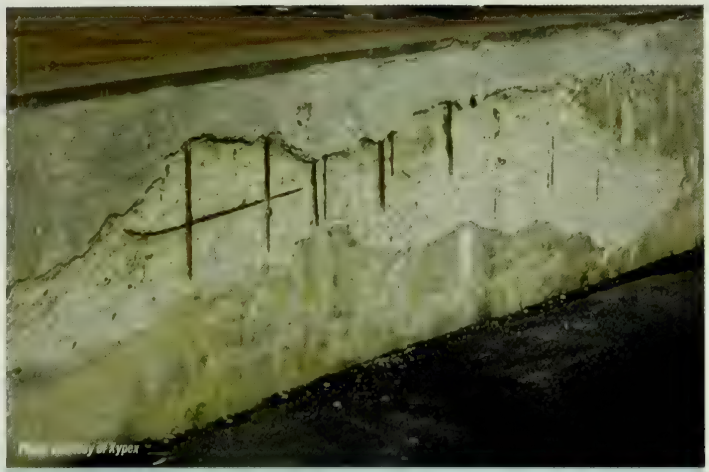


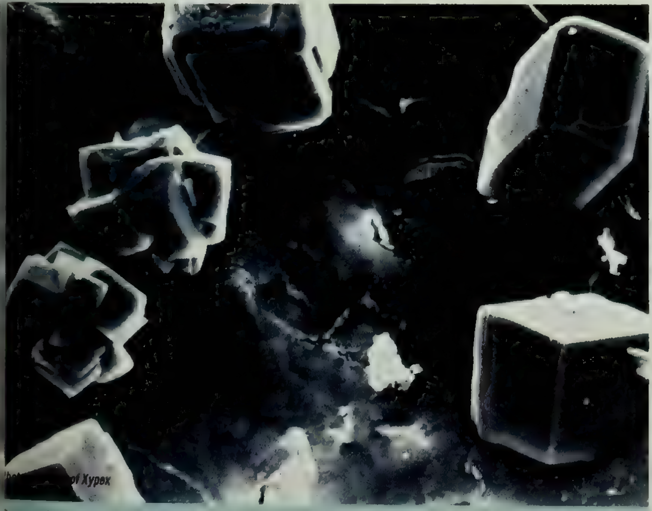
Photo courtesy of Xypex

Example of concrete deterioration caused rusting of the reinforcing steel.

Because these crystalline formations are within the concrete and are not exposed at the surface, they cannot be punctured or otherwise damaged like membranes or surface coatings. Crystalline waterproofing is highly resistant to chemicals where the pH range is between three and 11 under constant contact, and two to 12 under periodic contact. Crystalline waterproofing will tolerate temperatures between -25 degrees Fahrenheit (-32 degrees Centigrade) and 265 degrees Fahrenheit (130 degrees Centigrade) in a constant state. Humidity, ultraviolet light, and oxygen levels have no impact on the products ability to perform.

Crystalline waterproofing offers protection against the following agents and phenomena:

- Inhibits the effects of CO, CO2, SO2 and NO2, the gasses responsible for the corrosive phenomenon known as 'carbonation.' Carbonation is the process where exterior gasses create a corrosive phenomenon that softens the surface layers of the concrete. Carbonation testing shows that the multiplicative crystalline formations also reduce the flow of gases into concrete, thus significantly retarding the carbonation at the surface in which the alkalinity is reduced and the surface layer is softened.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canning electron microscope (SEM) view of a concrete pore before the pplication of crystalline waterproofing.

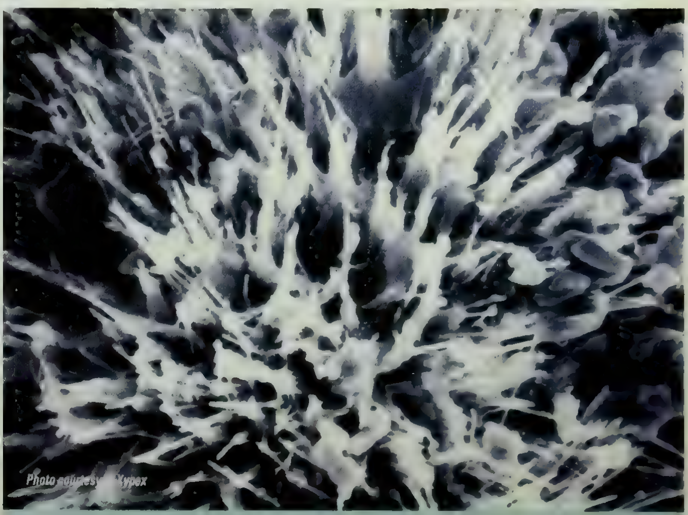
Photo courtesy of Xypex

Scanning electron microscope (SEM) view of a concrete pore filled with multiplicative crystalline formation, initial stages.

- Protects concrete against alkali aggregate reactions (AAR) by denying water to those processes affecting reactive aggregates.
- Extensive chloride-ion diffusion testing shows that concrete structures protected with a crystalline waterproofing treatment prevent the diffusion of chlorides. This protects reinforcing steel and prevents deterioration that could occur from oxidation and expansion of steel reinforcement.

Michael Brown, P.E., principal with Golder Associates in Seattle, has used crystalline waterproofing in numerous applications, but notably on the Blackbird mine remediation project near Salmon, Idaho, which has very low pH acidic mine water flowing through concrete structures. "We use crystalline waterproofing technology as an additive to concrete to reduce permeability and provide protection for the epoxy coated reinforcing bar," said Brown.

The more traditional methods of protecting concrete, such as membranes and other coatings, may still leave it susceptible to water and chemical damage. Only with the addition of crystalline technology can the pores and microcracks that normally result from the process of setting and curing, allow concrete to be sealed.

Type of Construction and Appropriate Crystalline Technology Application

Crystalline waterproofing and protection technology is available in powder form and is mixed with water. Three different application methods include:

- Applied to the surface of an existing concrete structure, for example, a foundation wall or a floor slab.
- Mixed directly with the concrete batch at the plant as an admixture.
- Shaken as a dry powder, applied to green, or uncured, concrete and toweled into the surface.

Methods and Procedures of Crystalline Waterproofing Coating Applications

When applied to clean, bare and previously saturated substrate as a slurry mixture, the reactive chemical ingredients in crystalline waterproofing can penetrate up to 12 inches deep inside the concrete by using the water as the migrating solution in a process of chemical diffusion. As these chemicals penetrate through the capillaries and pores, the reaction with the mineral by-products of cement hydration creates the crystalline formation that fills the cracks or the pore.

Crystalline waterproofing can be applied by a brush or with spray-on equipment. To ensure the success of the application, care must go into the conditions under which the material is applied related to surface preparation, surface wetting, coat thickness, and curing time.

Because the crystalline waterproofing coating system has a unique chemical diffusing characteristic, proper surface preparation of the concrete is critical to the performance of the material. The concrete surface that will receive the crystalline waterproofing coating needs to have an open pore texture to allow the transfer of the reactive crystalline chemicals from the coating into the concrete substrate. The surface also needs to be clean and free of form oil, laitance and other foreign matter as this can potentially cause delamination of the coating.

The three common methods of concrete surface preparation are water blasting, sand blasting and acid etching. When water blasting, the pressure should be 3,000 pounds per square inch (psi) to 4,000 psi. Sand blasting is normally required when steel forms ve been used and the concrete has a tight, mirror like finish. Acid etching can e accomplished using either muriatic acid or citrus-based products when the use of an id is not environmentally acceptable.

Wetting the Surface

The coating systems require that the concrete be in a saturated, surface damp conditio the waterproofing to be effective. The active chemicals in the coating use water a migrating or diffusing medium that allows the chemicals to transfer from the coating c the capillary tracts of the concrete. To make sure that concrete on vertical surface s saturated, wet the walls with clean water and allow the moisture to be drawn into e substrate for approximately ten minutes. Re-wet the walls a second time and allo stand for 20 minutes.

In hot weather, when evaporation rates are high, it may be necessary to soak the conc e overnight. This can be accomplished using either soaker hoses on the top of the wall, t allows water to flow down the vertical surfaces, or a series of sprinklers can be used i wall is less than 12 to 15 feet.

If water is not readily available on the job site, the saturation of the concrete shoul e done early in the morning, when evaporation rates are low and before the concrete be s to heat up. In difficult conditions of hot sun and wind, it is better to attempt small a s that can be controlled, rather than large areas at one time. In hot weather, the use o n evaporation retarder to help keep moisture in the concrete can be considered.

In cold weather, saturation of the concrete should only take place when the amb t temperature is going to be above 33 degrees Fahrenheit for 24 hours.

Coating Application

The crystalline waterproofing coating materials are mixed with water at a ratio of five p s powder to two parts water by volume for brush application, and five parts powder to t e parts water by volume for spray application. The coverage rate is 1.25 to 1.5 pounds er square yard per coat. At this rate, a 60-pound pail of material will cover 360 to430 sq e feet, and a 50-pound bag will cover 300 to360 square feet of surface area.

Coatings can be applied by brush, hopper gun or specialized spray equipment. When u g a standard six-inch masonry brush, one person can mix and apply approximately 80 to 0 square feet per hour per coat. A hopper gun or texture gun uses a two-person crew with e person mixing material and the second person spraying. The gun uses a three-eighths h nozzle and operates at roughly 25 psi. A two-person crew can apply the coating at a ra t 400 to500 square feet per hour per coat.

Specialized spray equipment is operated with a three-person crew. At application rate t 1200 to1500 square feet per hour per coat, it is necessary to have all materials - measured in order to keep up with the spray equipment capacity. When using this typ t equipment, the best procedure is to pre-measure the powder into at least five or six l e buckets (five gallon pails) and pre-measure the water. This is done on the basis of e parts powder to three parts water by volume.

On vertical surfaces, the standard application procedure is to start at the top of the l and work down. When using spray equipment, the first coat of material can be b k- brushed using a 20-inch wide janitors broom with a soft bristle or a finisher's broom. s helps ensure an even coverage rate and minimizes any run down of the coating.

ien a second coat is specified, it needs to be applied no later than 48 hours after the first at. Under normal conditions, the crystalline waterproofing coating will begin to set up in o to three hours and application of the second coat can be done at this time. If the first at has dried out, it should be lightly moistened with water prior to the second coat being plied. Failure to do so may result in lack of bond between the two coats.

When applying the coating materials to a concrete structure, it is better to break the job up into manageable segments rather than try to complete large areas at one time. This becomes even more critical when the weather is hot or windy. ■

CLICK FOR ADDITIONAL REQUIRED READING

e article continues online at ***archrecord.construction.com/resources/conteduc/archives/0601xypex-1.asp***. To receive AIA/CES credit, you are required to read this additional text. e quiz questions below include information from this online reading. To receive a faxed copy of the material, call Xypex Chemical Corp. at 800-961-4477.

AIA/ARCHITECTURAL RECORD **CONTINUING EDUCATION** Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Understand how crystalline technology works with concrete to provide high performance waterproofing qualities.*
- *Explain the difference between porosity, permeability and the mechanics by which water is absorbed through concrete structures.*
- *Discuss how crystalline waterproofing technology improves the durability of concrete structures and reduces maintenance.*
- *Identify appropriate crystalline technology product applications for various types of concrete construction.*
- *Analyze how crystalline technology admixtures can impact building life cycle and project construction costs.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 225. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health, safety, welfare credit.

QUESTIONS

1. Porosity is a measure of:
a. Density
b. Voids as a percentage of volume
c. Liquid flow rate
d. Relative compressive strength
e. Unit weight

2. Concrete is permeable and porous due to:
a. Poor workmanship
b. Insufficient curing time
c. Incorrect concrete mix
d. Voids created by water in the mix and cracking due to shrinkage
e. Flaws in the formwork

3. Concrete surface coatings and membranes susceptible to all of the following except which?
a. Puncture
b. Deterioration and wear
c. Blistering
d. Delamination
e. Poor adhesion

4. D'Arcy's Coefficient is an indicator of:
a. Permeability
b. Porosity
c. Density
d. Design strength
e. Deflection

5. Crystalline technology offers protection against all of the following except which?
a. Carbonation
b. AAR
c. Chloride ion diffusion
d. Oxidation due to water penetration
e. Heat migration promoting cracking

6. Crystalline technology works by which mechanism?
a. Plugs holes and voids with a solid cement material
b. Reacts with concrete to fill voids and cracks with crystalline growth
c. Shifts aggregate material into the voids
d. Fill voids with a plastic water resistant material generated by chemical reaction
e. Seals openings and channels within 2" of the surface

7. Carbonation is the process where:
a. Air bubbles form within the concrete
b. Carbon migrates from reinforcing steel to the surface staining the concrete
c. Exterior gasses create a corrosive phenomenon, which soften the surface layers of the concrete
d. Steel reinforcement oxidizes.
e. Water is trapped within the concrete

8. Crystalline waterproofing surface application can penetrate up to:
a. 12 inches
b. 10 inches
c. 8 inches
d. 4 inches
e. 2 inches

9. For surface crystalline waterproofing applications under normal conditions, the treated surface should be:
a. Sprayed six times a day
b. Sprayed three times a day for two to three days to prevent premature drying
c. Maintained in a saturated condition for two days
d. Saturated for one day, sprayed three times daily for the next day
e. Saturated for only one day only

10. The major threat created by the diffusion of chlorides is:
a. Surface delamination
b. Reduction of the bond between cement and aggregates
c. Increase in the volume of voids in the concrete
d. Softening of the concrete
e. Oxidation and expansion of steel reinforcement

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YPEX Chemical Corporation is a manufacturer of crystalline waterproofing materials with an international network of distributors and licensees in over 70 countries. XYPEX has grown a successful reputation ver the past 36 years by carefully integrating corporate marketing and research strategies around the needs of our customers. Our commitment to quality is on-going; our products and technical support re readily available worldwide; our product line meets the demands of value engineering; and our product R&D keeps pace with the advances in cement behavior research. XYPEX products have been specified nd applied on thousands of major concrete structures around the world.

The Pros and Cons of Restoring and Replacing Wood Windows

Sustainability, historical accuracy and economics all enter into decisions about restoration or replacement

Provided by Artistic Doors and Windows, Inc.

By Karin Tetlow

Half a century ago, most architects were occupied with designing new buildings. Rarely did they debate the pros and cons of keeping any part of an existing structure, let alone the structure itself—unless the building had an established historical provenance. New construction cost less and was better, while restoring a building was often considered to be prohibitively expensive, and not worthwhile.

Times have changed. Today, more than 90 percent of construction already involves existing structures, many of which are historic, notes Kirk Cordell, executive director of the National Center for Preservation Technology and Training of the National Park Service. Restoring a city row house is now de rigueur, reinventing historic office buildings as condominiums is happening across the country, while industrial buildings and former churches are being adapted as offices, schools and housing.

Clearly, practitioners increasingly require the skills for restoration, adaptive reuse. Architectural graduates must also be prepared. "It's part of the basic toolkit they need to come in with as much as they need to learn CAD," says T. "Gunny" Harboe, AIA, vice president of the preservation group at Austin AECOM in Chicago.

Evaluating Significance

Since windows are arguably the most dominant visual element of a building, decisions regarding their treatment are critical. While ornamental windows and windows in hist ic buildings are clearly worth special attention, windows on any existing building—b boathouse, townhouse or lighthouse—need to be analyzed.

The first step is evaluating the significance of the windows and planning for their repa r replacement. This includes investigating historical significance, objective analysis of e windows themselves, and subjective considerations of the architectural brief—such s sustainability, historical integrity, adaptive reuse or saving taxpayer money.

Essential is an understanding of how windows are made and the sometimes arc e vocabulary of their components. For example, "stiles" are the vertical members of a s h. "meeting rails" are two horizontal members of the sash that come together, w e "muntins" hold the window pane in the sash. Also essential is appreciating the b c functions of windows, such as admitting light, providing fresh air, providing a visual lin o the outside, and enhancing the appearance of the building.

The Preservation Brief on ***The Repair of Historic Wooden Windows*** published by e National Park Service, characterizes 'significance' in the broadest terms. It states t windows should be considered significant to a building if they: are original, reflect e original design intent for the building, reflect period or regional styles or building practi s. reflect changes to the building resulting from major periods or events, or are example f exceptional craftsmanship or design.

"As 'character defining features,' windows are subject to a rather strict analysis," says r. George C. Skarmeas, AIA, Principal, Director of Historic Preservation for Hillier Architect e. He lists the areas in which all projects, small or large, simple or complex, are evaluat

- Significance as character defining features. Determine if windows are original, and w t changes have been made over time.

Photo courtesy of HillierArchitecture

Virginia State Capitol, 1785-92, awaiting restoration by Hillier Architecture. Architect: Thomas Jefferson

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **The Pros and Cons of Restoring and Replacing Wood Windows.** To earn one AIA/CES Learning Unit, including one hour of health, safety, welfare credit, answer the questions on page 222, then follow the reporting instructions on page 225 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Analyze the choices between restoring and replacing old wood windows.*
- *Describe the components and functions of old and replacement wood windows.*
- *Examine design issues, options, alternatives, and recommendations for renovation of old wood windows.*

- Presence of significant fabric, information and historic evidence. This includes paint structure and history of paint layers, i.e. a comprehensive seriation analysis.
- Performance characteristics, both as an element of the original design, and construction and as an element of a new use plan. This area, he notes, is one of the most difficult to deal with.
- Overall condition assessment and organization in different categories of conditions and deterioration, such as good, moderate, and severe.
- Treatment options, including surface treatment to reconstruction and replacement.
- Construction costs
- Sequence of implementation. This embraces in-situ repairs to careful removal, and off-site restoration.

e information gained from such careful analysis, Skarmeas explains, will supply critical swers to a number of issues such as:

- The role windows play in the overall design of the historic resource.
- The important information they provide as part of the history of the building—its original colors, sequence of colors, and finishes.
- Clues as to how they have performed over time and where their weaknesses are.
- Deterioration patterns that may exist.
- Performance limitations against modern criteria and expectations, especially if there is a significant change in use.

raphic or photographic system will record existing conditions d illustrate the scope of any necessary repairs. Another ective tool is a window schedule, which lists all of the parts each window unit and notes their condition.

any analysis the following should be noted:

- Window location
- Condition of the paint
- Condition of the frame and sill
- Condition of the sash, rails, stiles, and muntins
- Glazing problems
- Hardware
- The overall condition of the window such as excellent, fair, poor

ually important is documentation regarding the qualities inherent in the windows, which ake restoration worthwhile and, on occasion, have been known to evoke inspiration.

any factors, such as poor design, moisture, vandalism, insect attack, and lack of aintenance can contribute to wood window deterioration, but moisture is the primary ntributing factor in wooden window decay. Sills seem to fail first because they are exposed beating sun, freezing rain, snow and bird droppings.

onforming to Standards

olonial sills pitch at a modest four or five degrees and are therefore more likely to collect oisture-trapping soot and dirt. Today's sills are usually pitched at a steeper 11 degrees nd higher. The bottom rail on the lower sash is also likely to be more impaired because of exposure to weather. The most deteriorated windows on houses are most likely to be ound on the top floors. In the eastern U.S., west-facing facades take the brunt of wind-riven winter storms and rapid temperature drops after afternoons of baking winter sun.

ven if a building has been conscientiously maintained window deterioration occurs. The eorgian Federal landmark Pennsylvania Hospital in Philadelphia—the first hospital in the ountry—has reached a point where, after 250 years, one more coat of paint will not suffice. Termite damage, dry rot, powder beetles, and all kinds of conditions are under the paint, reports Alvin Holm, AIA, who is fund raising chair for the preservation of the original Pennsylvania Hospital building.

Preserving the original dimensions of muntins is a problem when replacing single panes of glass with thicker insulated panes. The widths of muntins have evolved from nearly one-and-three-eighths-inch during the Colonial period, one-and-one-eighth-inch during the Georgian period, seven-eighths-inch during the Federal period, to as little as one-half-inch during the Italianate period. One-half-inch was too thin for practical purposes, and muntins were often broken and removed, so that larger panes of glass could be installed, reports craftsman Torben Jenk, who has restored many buildings in the Philadelphia area. He notes that an important shadow-casting feature is removed when the depths of muntins are reduced to accommodate the thickness of double-glazing.

The Secretary of the Interior's Standards for Rehabilitation (www.cr.nps.gov) defines rehabilitation as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."

Many factors, such as poor design, moisture, vandalism, insect attack, and lack of maintenance can contribute to wood window deterioration, but moisture is the primary contributing factor in wooden window decay.

The critical paragraph reads: "The guidance that is basic to the treatment of all historic buildings—*identifying, retaining, and preserving* the form and detailing of those architectural materials and features that are important in defining the historic character—is always listed first in the "Recommended" area." This is summarized by every restoration architect as giving first preference to retaining and repairing original materials wherever possible, or replacing in kind.

Photo courtesy of HillierArchitecture

Parc Rittenhouse, Philadelphia, PA, before conversion by HillierArchitecture

These Standards are the historic preservation gold standard for national, state, local, and district authorities and preservation bodies. But buildings must confirm first to local landmark criteria, which, on occasion, are stricter in their interpretation. This can affect the project cost and construction phasing. An example is the conversion of the 1926, 17-story

Philadelphia Parc Rittenhouse, formerly the Rittenhouse Regency into residential condominiums by Hillier Architecture. Under the Secretary of the Interior Standards, the preference is for all the original 1,000 wood double hung windows to be replaced with a compatible unit or restored. But since the building is registered with the City of Philadelphia Historical Commission, explains James B. Garrison, AIA, Associate Principal, Hillier Architecture, the Philadelphia Historical Commission prefers to see windows from the second to the fifth floors either be replaced in kind or rehabilitated. For upper story windows, they will consider compatible units of a different material that also meet the Secretary's Standards.

In the world of practice, questions regarding restoration or replacement are not always argued over the condition and functions of the windows themselves. "The biggest issue we have to confront is clients or contractors who say they must be replaced, or there is no other option," says Skarmeas. "But past experience has indicated that there is rarely a case in which windows are beyond repair and cannot be repaired, restored, and reused. While the costs may be high, there are technology, products, and methods today that allow us to restore deteriorated windows without resorting to a replacement program. The costs may be higher is some cases, especially if there is severe deterioration."

One common argument for replacement is the payback gained through energy conservation resulting from the improved U-values (BTU loss per hour) of modern windows. When the U. S. General Services Administration (GSA) Center for Historic Buildings, Office of the Chief Architect, analyzes different upgrade approaches, a number of quantifiable variables are included, which must be balanced against standards of stewardship and saving taxpayer money. As a rule, cost analysis favors replacement in kind of simple double-hung wood windows, such as those in the Department of the Interior Headquarters, says Rolando Rivas-Camp, FAIA, Director (see Sidebar: How GSA Approaches Restoring or Replacing Historic Windows). Skarmeas reports that he has rarely found a window replacement program that gives fairly substantial paybacks.

"We do not recommend replacing original wood windows for any historic building if th original windows can be saved," says Michael Holleman, AIA, Director, Historic Preservatio VITETTA. But when the firm restored the historic landmark former Philadelphia Navy Ya Building 101 and adapted it for office reuse and its headquarters, replacement was the on option. Constructed in 1910 in the Renaissance Revival style, the building house administrative offices for the Marine Corps and was the barracks for enlisted men.

All of the original windows had been replaced with aluminum-framed windows in th 1950's. In poor condition and poorly crafted, with a mill finish instead of a paint finish lik the original wood windows, and a configuration which did not correspond to the origin division of the sash with muntins, the windows significantly changed the appearance of th building's facades, giving the structure a lifeless appearance. In addition, the window were single glazed and thermally inefficient.

> ***In the world of practice, questions regarding restoration or replacement are not always argued over the condition and functions of the windows themselves. The biggest issue we have to confront is clients or contractors who say 'they must be replaced,' or 'there is no other option.'***

Also being a reinvestmen tax credit project, the three story VITETTA Headquarter needed to meet th Secretary of the Interio Standards. Given that th value of the tax credits wer significant relative to th added cost of replicating th original windows and, as th existing windows needed to be replaced, the question became one of finding the righ window system. After looking at a fixed versus operable sash, the firm decided on fixe windows because they were more economical, more energy efficient with lower operatin costs, and required less future maintenance.

Getting the divided light and double hung look right wa a major issue. The final choice was insulated glazing wit adhered wood muntin bars and aluminum spacers behin the bars. The profiles of the sash and muntins wer manufactured to match the original architect's drawings as none of the historic windows remained.

Main entrance, Navy Yard Building 101, Philadelphia, PA, before restoration

VITETTA Headquarters facing the parade ground, formerly Navy Yard Building 101, Philadelphia, PA, restored by VITETTA

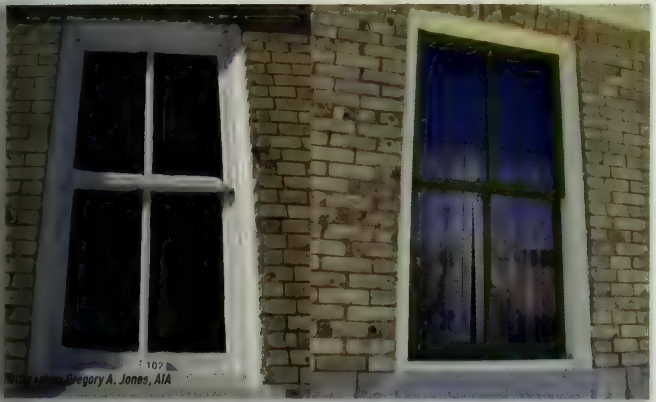
Interior, Navy Yard Building 101, Philadelphia, PA before restoration

Restored interior, VITETTA Headquarters, formerly Navy Yard Building 101, Philadelphia, PA

Old Mackinac Point Light Station in Mackinaw City, MI restored by the SmithGroup

reserving History and Delivering Sustainability

some cases, historical value overrides today's requirements for thermal efficiency. An ample is the Old Mackinac Point Light Station in Mackinaw City, Michigan. Having earned storic preservation status by guiding ships sailing though the Great Lakes via the busy raits of Mackinac from 1892 until 1958, when it was replaced by beacons atop the ackinac Bridge, the Tudor-Revival building required restoration as a historic exhibit. The nithGroup produced an historic structure report and managed the restoration. The upper d lower sashes of the single-pane windows were removed and fitted with modern brass-ring weather stripping, reports Gregory A. Jones, AIA, the SmithGroup's project manager. lon pile weather-stripping was added to the window, meeting rails and sash tops and ttoms. Paint was stripped and deteriorated portions of the wood exterior consolidated with oxy, sanded, and repainted. In some cases, upper and lower sashes were replicated. ture plans include fabricating wood storm windows to replace the originals.


Gregory A. Jones, AIA

Window before and after restoration by SmithGroup at Old Mackinac Point Light Station

Photo courtesy of Susan Maxman & Partners

The Motherhouse in Monroe, MI before restoration by Susan Maxman & Partners

For other restoration projects, sustainability is one of the primary goals, along with maintaining historical integrity. When the Sisters, Servants of the Immaculate Heart of Mary, an order of Sisters dedicated to eco-justice, hired Susan Maxman & Partners to prepare a master plan on how to best utilize their buildings and land in the future, they requested that all novations and land uses adhere to the principles of sustainable design. The Sisters also anted the renovation of their Motherhouse, a significant structure in southeast Michigan, be a model of sustainable design by including improvement to the energy efficiency of e windows. After an extensive analysis, the choice was made to replace the majority of the ashes. (see Sidebar: The Motherhouse: Examining Sustainable Options for Restoration or eplacement).

The GSA Approach to Restoring or Replacing Historic Windows

The U.S. General Services Administration (GSA) is responsible for an inventory that includes over 400 historic buildings constructed between the early nineteenth and mid-twentieth centuries. Most were built during the 1930's, a period of high quality public building construction. Many retain original wood or steel windows that are character defining architectural features. In keeping with the Secretary of the Interior's Standards for Rehabilitation, GSA seeks repair and maintenance approaches that preserve original materials and design, repairing, and upgrading windows for functionality, energy efficiency, and improved security, as appropriate. For large and complex historic building projects, GSA often undertakes detailed analysis of alternative upgrade approaches to weigh cost, lifecycle, energy efficiency, functionality, and preservation tradeoffs.

This analysis guides GSA in balancing conflicting goals between setting a high standard for federal stewardship and reaching sound and cost effective decisions. Sometimes through this process, GSA architectural teams devise new solutions that achieve preservation goals at a savings to American taxpayers.

As a rule, GSA cost analysis has favored repair with replacement of irreparably damaged windows where the historic windows are large, multi-paned, and fabricated in steel or bronze. On the other hand, project-specific cost analysis has generally favored replacement in kind at buildings containing simple wood windows, such as the one-over-one double-hung windows at the Department of Interior (DOI) Headquarters Building.

For each project undertaken, GSA examines the arguments for repair or a combination of repair and in-kind replacement that offer the best value for GSA federal agency tenants, along with stewardship of the nation's public building legacy.

The Potomac Annex (Old Naval Observatory Campus) and the Department of the Interior Headquarters Building are both in Washington D.C., are listed on the National Register of Historic Places, and require review by the State Historic Preservation Officer for the District of Columbia under Section 106, National Historic Preservation Act (NHPA). Alterations must conform to the Secretary of the Interior's Standards for Rehabilitation, which give first preference to retaining and repairing original materials wherever possible. Necessary replacements, such as irreparably damaged windows, must match originals, including configuration, profile, dimensions, and detailing of sash muntins, mullions, meeting rails, jambs, and sills.

Potomac Annex (Old Naval Observatory Campus), Washington, D.C.

Constructed between 1843 and 1910, the site is a campus of small buildings. Specified work (not yet executed, as of 2005) is limited to repair of wood sash, repair and replacement of sash weights and cords, and caulking to improve weather-tightness. Estimated costs of repairing 438 windows in Building 2 (based on 1995 prices) are $122,041 ($279 per window)

Window retention advantages include:

- Lower lifecycle cost
- Preserving original materials, maintaining historic integrity, and original appearance.

Potomac Annex (Old Naval Observatory Campus), Washington, D.C., Architect: James Melville Gillis

Department of the Interior Headquarters Building, Washington, D.C.

Department of the Interior Headquarters Building, 1935, Washington, D.C., Architect: Waddy Wood

Constructed in 1935, the DOI Headquarters is a National Register-listed building in Washington's monumental core, near the National Mall. The building had 1,488 original wood double-hung, single glazed windows. New interior storm windows were installed for energy conservation and security (for blast resistance). The phased project combines repair and replacement in kind to reduce costs. Advantages of combined repair and in-kind replacement:

- Lower initial and life cycle cost than repair alone.
- Preserved original materials on main (E Street) facade, thus maintaining historic integrity.
- Replacement windows are located on a secondary façade.
- Original one over one, wood sash construction allows authenti replication.
- For future phases, the choice of repair versus replacement is t be determined, based on costs at time of construction.

Disadvantage: somewhat higher lifecycle, long term cost

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at ***archrecord.construction.com/resources/conteduc/archives/0601artistic-1.asp***. To receive AIA/CES credit, you are required to read this additional text. The quiz questions below include information from this online reading. To receive a faxed copy of the material, call (732) 726-9400, fax: (732) 726-9494 or email: info@artisticdoorsandwindows.com.

AIA/ARCHITECTURAL RECORD **CONTINUING EDUCATION** Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Analyze the choices between restoring and replacing old wood windows*
- *Describe the components and functions of old and replacement wood windows*
- *Examine design issues, options, alternatives, and recommendations for renovation of old wood windows*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 225. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self report form on *Record's* web site—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health, safety, welfare credit.

QUESTIONS

1. What is the function of muntins?
  a. To hold the window pane within a sash
  b. To serve as an integral part of the window casing.
  c. Protect the edge of the sill
  d. Holds the stiles of a window

2. According to the National Park Service windows are significant if they
  a. Are original
  b. Reflect the period or regional style of the building
  c. Have been replaced
  d. a and b above

3. The U value of a single pane of glass is:
  a. 2.5
  b. 1.5
  c. 1.0
  d. 0.5

4. The Secretary of the Interior's Standards for Rehabilitation recommends:
  a. Identifying the form and detailing of architectural features
  b. Replacing windows as a first choice
  c. Retaining and preserving architectural features
  d. a. and c. above.

5. All historic buildings being renovated must conform first to:
  a. The Secretary of the Interior's Standards
  b. Their original architectural plans
  c. Local landmark criteria
  d. State Historic Commission Office

6. GSA cost analyses have found that:
  a. Replacing wood windows is always advantageous.
  b. Wood windows are usually not cost effective to repair or restore
  c. Replacement in kind of simple double wood hung windows is a preferred choice
  d. Restoring simple double hung windows is always cost efficient

7. The usual tilt angle of Colonial sills is:
  a. 14 degrees
  b. 4 to 5 degrees
  c. 10 to 12 degrees
  d. 8 degrees

8. Older windows:
  a. Have minimal or no weather-stripping
  b. a. c. and d.
  c. Often are fitted with float or handblown glass.
  d. Usually contain layers of lead paint

9. Replacing old windows can:
  a. Improve thermal efficiency
  b. Damage casings and wallboards.
  c. Cost more than restoring them
  d. All of the above

10. Installing tinted glass on restored windows:
  a. Does not meet the Secretary of the Interior's Standards
  b. Should only be done to enhance thermal efficiency
  c. Can avoid the greenish tint of ordinary glass
  d. Should only be done if the whole window is replaced

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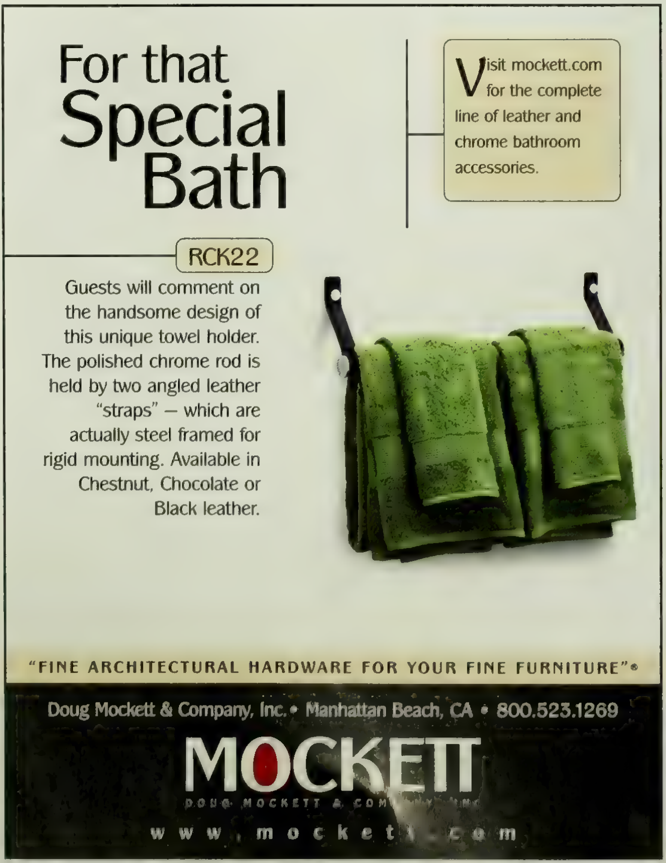

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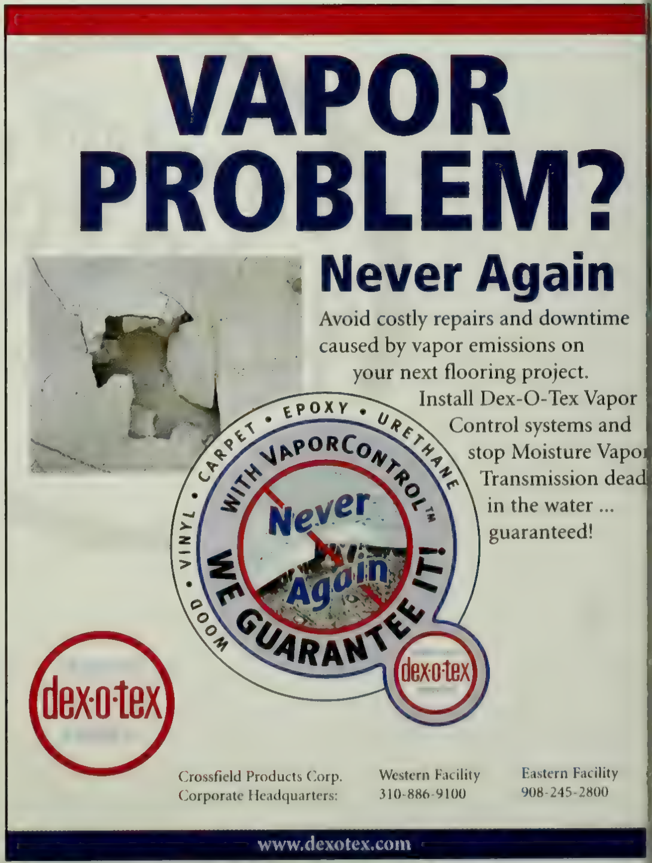

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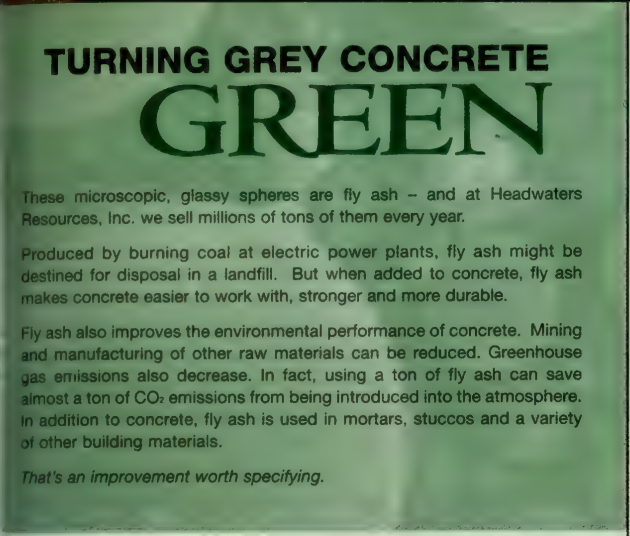

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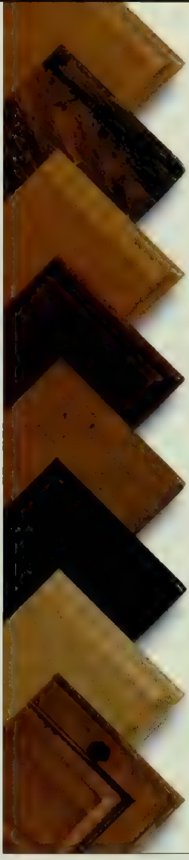

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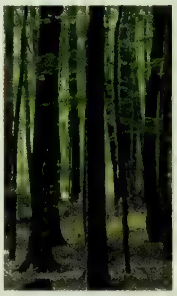

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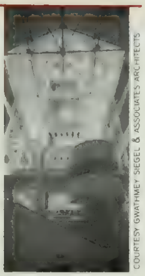
lectures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exhibitions

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Liquid Stone: New Architecture in Concrete
through January 29, 2006

Jewish Washington: Scrapbook of an American Community
through January 8, 2006

Washington: Symbol & City
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Dates & Events

New & Upcoming Exhibitions

The Fashion of Architecture: Constructing the Architecture of Fashion
New York City
January 11–March 11, 2006
In this exhibition, visitors are encouraged to investigate the contemporary relationship between fashion and architecture. Studies in the congruencies between these two dynamic disciplines will provide a framework for understanding current trends in visual culture. *The Fashion of Architecture* coincides with Fashion Week and showcases projects by Yeohlee Teng, Hussein Chalayan, Shigeru Ban, and Zaha Hadid. At the Center for Architecture. Call 212-683-0023 or visit www.aiany.org for more information.

Open: New Designs for Public Space
Chicago
January 28–May 7, 2006
The idea of what public space in Chicago should be has continued to evolve from the city's earliest days, from the development of neighborhood streets and gardens to today's world-famous Millennium Park. This exhibition illustrates these changing concepts with more than 300 architectural renderings, photographs, and models that show how communal space has changed in the city. At the ArchiCenter. Call 312/922-3432 or visit www.architecture.org for additional information.

The HOME House Project: The Future of Affordable Housing
Atlanta
January 26–March 28, 2006
A multiyear traveling initiative created by the Southeastern Center for Contemporary Art (SECCA) in Winston-Salem, North Carolina. The first component of the project was a national design competition and exhibition that showcased innovative solutions for sustainable low-to-moderate-income-family housing proposed by more than 440 contest entrants from around the world. At the Museum of Design Atlanta. Call 404/688-2467 or visit www.museumofdesign.org for more information.

Symmetry
Los Angeles
January 26–May 7, 2006
In the world of space and time, symmetry derive its meaning from a center, a repetition of forms on mirroring sides of an axis. This exhibition features works by Los Angeles–based contemporar artists that use or relate to this concept. At the MAK Center for Art & Architecture L.A., at the Schindler House. Call 323/651-1510 or visit www.makcenter.org.

Ongoing Exhibitions

The Initiated Eye: Secrets, Symbols, Freemasonry, and the Architecture of Washington, D.C.
Washington, D.C.
Through December 31, 2005
An original exhibition focusing specifically on the significant contributions of Freemasons to the design and architecture of Washington, D.C. At the Octagon. Call 202/638-3221 or visit www.theoctagon.org.

Two Columbus Circle: Museum of Arts & Design and Allied Works Architecture
New York City
Through December 31, 2005
The first public viewing of the design for Museum of Arts & Design. This exhibition traces the conceptual development of the design by Brad Cloepfil of Allied Works Architecture and will include a detailed preview of the new facilities, which will anchor the southwestern corner of Central Park. At the Center for Architecture. Call 212/683-0023 or visit www.aiany.org.

Field Experiments in Art, Architecture, Landscape: Hombroich Spaceplacelab
New York City
Through December 31, 2005
Fourteen renowned architects and artists from around the world are currently creating an experimental development called Hombroich Spaceplacelab, a unique and daring merger of art, architecture, and landscape near Cologne, Germany. Each designer is individually responsible for one of the project's 40-acre lots. Each lot must have a ratio of 90 percent landscape to 10 percent building. Models, drawings, plans, and

hotographs of the projects are on view at the enter for Architecture. Call 212/683-0023 or isit www.aiany.org.

xcavating Design: 18th-Century rawings and Prints

ew York City

hrough January 8, 2006

isitors can trace the origins of Western archi- ectural design through drawings, prints, and ketches that evoke the majesty of the Roman uins. In the Cooper-Hewitt's new 700-square- oot ground-floor gallery. For more information, all 212/849-8400 or visit www.ndm.si.edu.

ewish Washington: Scrapbook of an merican Community

ashington, D.C.

hrough January 8, 2006

crapbooks, historic photographs, business phemera, architectural artifacts, and other items onvey the story of the local Jewish community s it grew along 7th Street into neighborhoods cross the city. At the National Building Museum. all 202/272-2448 or visit www.nbm.org.

1945 Creativity and Crisis: Architecture and Design of the World War II Era

Chicago

Through January 8, 2006

Chicago architecture and design and their contributions to everyday life during the 1940s are subjects of this exhibition. Well-known architects and designers, such as Ludwig Mies van der Rohe, L. Morgan Yost, Bertrand Goldberg, Bruce Goff, Henry P. Glass, and Richard Ten Eyck, are featured in the exhibition. At the Art Institute of Chicago. Visit www.artic.edu/aic.

Prairie Skyscraper: Frank Lloyd Wright's Price Tower

Bartlesville, Okla.

Through January 15, 2006

An exhibition of approximately 108 drawings, models, photographs, documents, building components, and furnishings to mark the building's 50th anniversary. At the Price Tower Arts Center. For more information, call 918/336-4949 or visit www.pricetower.org.

Renewing Wright

Pittsburgh

Through January 15, 2006

This exhibition brings together two iconic buildings by Frank Lloyd Wright with, in each case, an associated project by a leading visionary architect of today. At the Heinz Architectural Center, Carnegie Museum of Art. Call 412/622-3131 or visit www.cmoa.org.

Design Innovations in Manufactured Housing

Chicago

Through January 15, 2006

Commissioned for this exhibition, the featured designs present creative solutions to fill the demand for affordable, high-quality housing. Eight nationally recognized architects and industrial designers—David Baker, Bryan Bell, Carol Brown, Teddy Cruz, Yolande Daniels, Doug Garofalo, David Khoury, and Ali Tayar—have contributed original models and drawings that consider innovation in the design, materials, and manufacturing techniques of low-cost, factory-built housing. At the Field Museum. For more information, call 312/922-9410 or visit www.fieldmuseum.org.

Designing the Taxi

New York City

Through January 15, 2006

This exhibition presents new concepts for New York's most iconic mode of transportation, the taxicab, as it approaches its centennial in 2007. Included are design firms Pentagram, Antenna Design, Birsel + Seck, IDEO, Ken Smith Landscape Architect, TRUCK, Imagination, Hybrid Product Design, and Blue Marlin. At Parsons The New School for Design. Call 212/229-8919 or visit www.parsons.edu/events.

Contemporary Chinese Architecture: Part One

London

Through January 17, 2006

China is currently undergoing rapid building and development and is fast becoming a dominant force in the future of architecture. This first display, in a two-part series, depicts these processes through a collection of spontaneous photographic impressions. At the Royal Academy. For additional information, call 020/7300-5839 or visit www.royalacademy.org.uk.

ReThink ReDesign ReCycle

Chicago

Through January 31, 2006

The ongoing exhibition *Competition: Public Process for Public Architecture Gallery* will be updated with the display of more than 100 entries for the competition to design on-street recycling bins created by members of the City of Chicago and the AIA Chicago Young Architects Forum. In CAF's CitySpace. Call 312-942-3432 or visit www.architecture.org.

International Arts and Crafts

Indianapolis

Through January 2006

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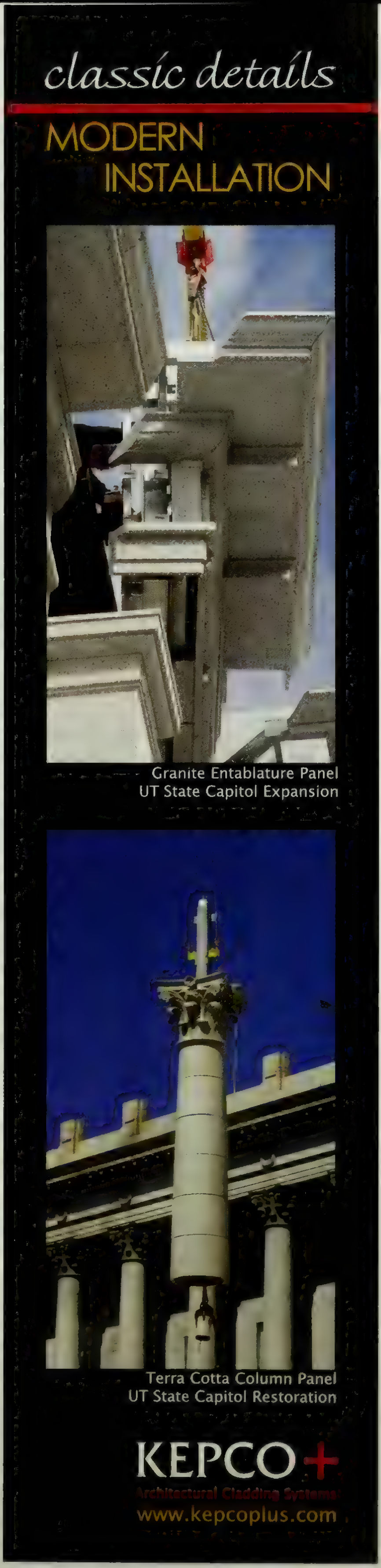

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Dates & Events

in London, this exhibition features more than 300 objects from Great Britain, where the Arts and Crafts movement began, as well as America, Europe, and Japan. At the Indianapolis Museum of Art. For more information, visit www.ima-art.org or call 317/923-1331.

Transcending Type
New Haven
Through February 3, 2006
This exhibition was curated by the editors of ARCHITECTURAL RECORD for the 9th International Venice Architecture Biennale held in September 2004. To fit the Biennale's theme, *Metamorph*, alluding to landmark changes in architecture largely fueled by the digital revolution, the curators invited six inventive young architects to share their unique visions of characteristically American building types. At Yale School of Architecture gallery. Call 203/432-2288 or visit www.architecture.yale.edu.

Wine Architecture: The Winery Boom
Vienna
Through February 6, 2006
This exhibition presents the background and developments that led to the unique Austrian cultural phenomenon (which emerged in the 1980s) of combining wine with architecture. At Architekturzentrum Wien. Call 431/ 522-3115 or visit www.azw.at.

Santiago Calatrava: Sculpture into Architecture
New York City
Through March 5, 2006
Many forms of Calatrava's celebrated buildings originated in his independent works of art. This exhibition showcases his sculptures in marble and bronze, drawings, and architectural models, including work related to the new transportation hub he has designed for the World Trade Center site. This is the first exhibition in the U.S. to feature such a large selection of Calatrava's independent work and to examine it in conjunction with his architecture. At the Metropolitan Museum of Art. Call 212/535-7710 or visit www.metmuseum.org.

Chicago Architecture Foundation Tours
Chicago
Through March 2006
Led by trained volunteer docents, these acclaimed tours explore the architecture of the Chicagoland area via bus, boat, train, by walking, or Segway. For descriptions of all tours, visit www.architecture.org/tours.

ReThink/ReDesign/ReCycle
Chicago
The ongoing exhibition *Competition: Public Process for Public Architecture* will be updated with the display of more than 100 entries for the competition to design on-street recycling bins created by members of the City of Chicago and the AIA Chicago Young Architects Forum. At the CAF's CitySpace Gallery. Call 312/922-3432 or visit www.architecture.org.

Lectures, Conferences, and Symposia

Against Type
New Haven
January 12, 2006
In conjunction with the exhibition *Transcending Type*, Yale School of Architecture will host a panel discussion moderated by Suzanne Stephens, deputy editor of *Architectural Record*. In Hastings Hall, Yale School of Architecture. For more information, call 203/432-2288 or visit www.architecture.yale.edu.

Realizing Affordable Housing through Smart Growth
Washington, D.C.
January 12, 2006
Ralph Bennett, president of Bennett Frank McCarthy Architects and architecture professor at the University of Maryland, will discuss five keys for achieving affordable housing through smart growth. He will consider the current housing boom and offer solutions that are inextricably linked to land use policy. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

CityVision: Young Designers Envision Future D.C. Neighborhoods
Washington, D.C.
January 13, 2006
District of Columbia middle school students who participated in the CityVision Fall 2005 Program will present their ideas for improving the Navy Yard, Potomac Avenue, and Capital Hill extended neighborhoods. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Symposium: Greening Roofs
Washington, D.C.
January 17, 2006
In the U.S., green roofs are a rapidly emerging technology of sustainable architecture and best management practices. Benefits of green, or vegetated, roofs include reducing storm-water runoff and urban heat islands while lowering a

uilding's energy requirements. Michael Perry, ith Building Logics and Dawn Gifford with D.C. reenworks will discuss the applicability and benefits of this technology, the elements of green oof systems, and examine the growing trend in e United States toward green roofs. At the ational Building Museum. Call 202/272-2448 or isit www.nbm.org.

avis Brody Bond/Max Bond
ashington, D.C.
anuary 23, 2006

July 2004, the architecture firm Davis Brody ond was selected to complete the overall plans r "Reflecting Absence," the World Trade Center emorial in New York City designed by Michael rad, AIA, and Peter Walker, FASLA. A founding rincipal of the New York–based firm, J. Max ond, Jr., FAIA, will discuss this central piece of e WTC site as well as his firm's other notable rojects, including Atlanta's Martin Luther King, r., Center for Nonviolent Social Change, and the irmingham Civil Rights Institute. At the National uilding Museum. Call 202/272-2448 or visit ww.nbm.org.

raig Dykers/Snøhetta
ashington, D.C.
anuary 25, 2006

he buildings of Snøhetta are smoothly integrated nto the landscape through the innovative use of aterials and forms. Craig Dykers, a founding rincipal of the Norwegian-based studio, will discuss some of the firm's internationally acclaimed rojects, including the Bibliotheca Alexandrina in lexandria, Egypt; the Turner Contemporary in argate, England; and the National Opera House n Oslo. At the National Building Museum. Call 02/272-2448 or visit www.nbm.org.

SA Federal Building Tour
ashington, D.C.
anuary 28, 2006

major federal building designed by architect oshe Safdie is currently under construction in he NOMA (North of Massachusetts Avenue) eighborhood of Washington. The agency eadquarters includes a six-story, crescent-shaped wing and two rectilinear, eight-story ings connected by an atrium. Jean Hundley, roject manager with the General Services dministration, will lead a tour of this 422,000-square-foot project. Call the National Building useum at 202/272-2448 or visit www.nbm.org.

Competitions

2006 Barrier-Free America Award
Washington, D.C.
Deadline: January 13, 2006

The Paralyzed Veterans of America (PVA), a national veterans' service and disability rights organization, has issued a call for nominations recognizing contributions to accessible design. Each year, PVA honors an individual with this national award for his or her sensitivity to the importance of accessible design, as well as the difference he or she has made through a particular project in achieving a barrier-free environment. Visit www.pva.org.

Design Ideas Competition
Deadline: January 16

A design ideas competition for a landmark building, expected to achieve a prominent height ranging between 50 and 60 floors, is part of the fourth phase of the Absolute development in the City of Mississauga, the second-largest city in the Greater Toronto area. The competition is intended to further develop the urban planning vision of the Mississauga City Center. The objective is to create an ensemble of high-quality buildings that contribute to the ongoing evolution of the Mississauga City Center, and the establishment of a strong residential neighborhood. Visit www.yourabsolute.com for more information.

Dedalo Minosse International Award Competition
Registration Deadline: January 27, 2006

In its sixth year, this competition focuses on the

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client. Work must have been completed by a professional architect or building engineer. Also, special sections have been added—one focusing on Italian architecture and the other on clients who have hired young architects under 40. Visit www.assoarchitetti.it.

Ceramic Tiles of Italy Design Competition

Deadline: January 30, 2006

This annual awards program recognizes design excellence in projects that feature Italian ceramic tile. North American architects and interior designers are invited to submit residential, commercial, and institutional projects. Entries may be submitted for domestic and international new construction and renovation projects. Visit www.italiantiles.com.

2006 Annual James Beard Foundation Awards

Deadline: January 31, 2006

The James Beard Foundation Awards recognize outstanding achievement within the fine food and beverage industry. Open to architects/designers in North America for restaurant projects since 2003. For further information, visit www.jamesbeard.org.

2006 Spectrum Awards

Deadline: February 3, 2006

Architects, designers, builders, contractors, distributors, retailers, installers, and other professionals from around the world will be vying for the chance to win a $10,000 Grand Prize in the 2006 Spectrum Awards presented by Coverings, the largest and most comprehensive annual marketplace for tile and stone. The competition, which draws installations representing excellence in the use of ceramic tile, seeks residential and commercial projects. To be considered, projects must have been completed within the timeframe of January 2003–December 2005. Call 703/683-8500 or visit www.coverings.com.

ASLA 2006 Awards

Deadline: February 10, 2006

Each year, the ASLA awards program honors the best in landscape architecture from around the globe, while the student awards program provides a glimpse into the future of the profession. The awards program is divided into five categories: General Design; Residential Design; Analysis and Planning; Research; and Communications. The call for entries also includes the Landmark Award, recognizing a landscape architecture project completed between 15 and 50 years ago. The student awards program also features a Student Collaboration category and a Student Community Service Award. Visit www.asla.org for more information.

The Architectural League of New York 2005–2006 Young Architects Forum

Deadline: February 10, 2006

Open to architects and designers no more than 10 years out of undergraduate or graduate school. Winners will receive a cash prize, exhibit their work, and present lectures during April and May at the League in New York City. For information, call 212/753-1722 or visit www.archleague.org.

International VELUX Award 2006

Registration Deadline: February 10, 2006

Submission Deadline: May 5, 2006

Open to students of architecture, the award celebrates and promotes excellence in completed study works and acknowledges students as well as their tutors. The overall award theme is "Light of Tomorrow, reflecting a wish to explore and discuss the role of daylight in architecture. Daylight and sunlight are important factors in how buildings

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are perceived and in the daily ives of people, their health and comfort, at home or at work. Visit www.velux.com/a.

4 Corners Design Competition

Registration Deadline: February 24, 2006
Submission Deadline: March 1, 2006

Submit a design for a pedestrian connectivity in downtown Naples, Florida. In addition to the jury's judging process, community members will vote for the "People's Choice Award." More information is available at www.aiaflasw.org.

Inside:Out—Weaving Arts into the Urban Fabric

Registration Deadline: February 27, 2006

The Boston Center for the Arts is sponsoring a two-stage, national open design competition for its pubic open spaces in Boston's South End neighborhood. Set at the crossroads of widely divergent social groups and communities, the Boston Center for the Arts' campus includes theaters, art galleries, artist studios, the Boston Ballet, restaurants, residences, and the iconic Cyclorama in a tightly knit urban block that connects its many publics through the performing and visual arts. The competition seeks innovative ways to spatialize the BCA's mission by bringing the inside out and by weaving arts into the urban and social fabric of this Boston neighborhood. Visit www.architects.org.

New Life for the Big Easy New Orleans

Deadline: March 1, 2006

An international competition for new housing in New Orleans in the wake of Hurricane Katrina's devastation to the Crescent City. Participants in the competition will design housing for an actual block in the city. Programmatic elements include single-family housing, multi-family housing, and mixed-use urban planning. For further information about the competition, visit www.architecturalrecord.com.

10th Biennial Bridge Awards Competition

Deadline: March 31, 2006

Portland Cement Association (PCA) is seeking nominations for its tenth biennial Bridge Awards Competition. The program, co-sponsored by *Roads & Bridges* magazine, recognizes excellence in design and construction of concrete bridges. All types of bridges—highway, railway, pedestrian—in which the basic structural system is concrete are eligible. Entries are encouraged for cast-in-place or precast concrete bridges with short, medium, or long spans. Newly constructed, reconstructed, or widened structures qualify for the competition. Call 847/972-9100 or visit www.cement.org for more information.

Edge as Center: Envisioning the Post-Industrial Landscape

Registration Deadline: March 31, 2006

The Boston Society of Architects (BSA) announced recently that the city of Somerville, Massachusetts, will join with the BSA to hold an international urban design ideas competition for the industrial Brickbottom area in East Somerville. A competition prize fund of $35,000 will be awarded to the top three entrants at the discretion of the seven-member jury. In addition, the winner will be given the opportunity to collaborate with the Mayor's Office of Strategic Planning and Community Development on planning and development activities in the area. For details, visit www.architects.org/somerville.

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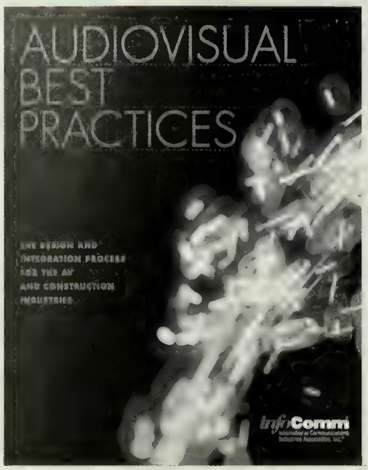
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Raven leads the industry with the introduction of Vapor Block® underslab vapor retarder. Vapor Block VB6, VB10, and VB15 are high performance underslab vapor retarders designed to retard moisture migration through concrete slabs. Vapor Block is made from state-of-the-art polyethylene resins that provide superior physical and performance properties that exceed ASTM E-1745 (Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B, and C requirements.

800-635-3456
www.vaporblock.com

| Circle Reader Service #156

Ornamental Metals

5 Metals

D.J.A. Imports, Ltd.

With over 30 years of fabrication experience, D.J.A. has evolved into a full service distributor specializing in ferrous and non-ferrous metals such as ornamental steel, aluminum, stainless steel, and brass. Furthermore, they have gate and door hardware in solid steel and stainless, furniture, commercial furnishings, and machinery. From their office and warehouse in NY, they serve the entire U.S., Canada, Puerto Rico, and the Caribbean. They are unmatched in customer service, offering endless customization options for a successful project.

718-324-6871
www.djaimports.com

| Circle Reader Service #159

Architectural Cladding System

Masonry

Boston Valley Terra Cotta Inc

A "green" architectural cladding system delivering the advantages of rain screen performance while retaining the beauty and richness of terra-cotta. Terraclad is a fired ceramic material produced in the U.S.A. in Boston Valley Terra Cotta Company's state of the art facilities in Orchard Park, NY. Available in colors, sizes and patterns to match the designer's imagination.

888-214-3655
www.bostonvalley.com

| Circle Reader Service #157

Decorative Thermoplastic Panels

6 Wood & plastics

Acoustic Ceiling Products

ACP's Classic Style Panels are made of a composite thermoplastic fire-retardant material with embossed designs and thermally infused color finishes ranging from Bermuda Bronze to Welsh Cherry. They offer a design selection that includes many popular traditional styles and contemporary standards. All designs are available for various ceiling applications and several have options to be used for walls, wainscoting and kitchen backsplash. The design options and finish combinations are virtually endless.

800-434-3750
www.acpideas.com

| Circle Reader Service #160

Thin Stone Cladding Systems

Masonry

Stone Truss Systems, Inc.

Thin lightweight natural stone wall cladding by THIN STONE SYSTEMS, LLC offers economical solutions for new construction and renovation, for both exterior and interior. Reinforced by a special patented process, the thin veneer panels of natural granite, marble, or limestone are applied to a structural framing system of extruded aluminum. Weighing only 6-lb. psf, the wall system provides many advantages including speed and simplicity of installation.

212-838-7667
www.thinstonesystems.com

| Circle Reader Service #158

Columns, Balustrades, Cornices & Mouldings

6 Wood & plastics

Melton Classics, Inc.

Melton Classics provides the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Columns come plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Their maintenance-free balustrade product is ideal for any application and available in four durable maintenance-free materials: MarbleTex™ synthetic stone, high density polyurethane, cast stone and polyvinyl.

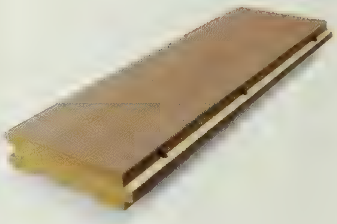
www.meltonclassics.com

| Circle Reader Service #161

TO ADVERTISE: Contact Deidre
T: (212) 904-2010 / F: (609) 426-
deidre_allen@McGraw-Hil

Composite Porch Planking

6 Wood & plastics



Tendura, LLC

TenduraPlank composite tongue-and-groove porch flooring is made of 40% plastic and 60% waste wood fiber and is available in two product lines. TenduraPlank Classic is factory primed and ready to be top coated with any quality exterior latex or oil-base porch paint. TenduraPlank Solids Collection is color-through and requires no painting. Guaranteed for as long as you own your home, TenduraPlank brings the elegant warmth of the traditional wood front porch back for good.

800-TENDURA (836-3872)
www.tendura.com
IBS Booth #W3491

| Circle Reader Service #162

Architectural Sheetmetal Products

7 Thermal & moisture protection

CopperCraft

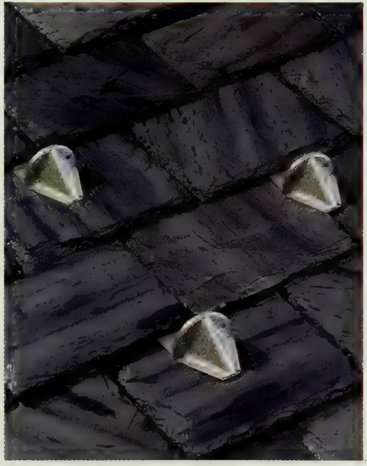
CopperCraft manufactures a comp line of high-quality architectural sh metal products including orname dormers, roof vents, roof drainage p ucts, conductor heads, steeples, cup and spires, as well as items which custom built to your specificati Design, engineering, testing, and fab tion methods that meet stringent st tural and performance standards m the difference. You get unsurpas quality, delivery, and custom ser including a nationwide network of re sentatives.

800-486-2723
www.coppercraft.com

| Circle Reader Service

Pad-Style Snow Guards

7 Thermal & moisture protection



Alpine SnowGuards

Alpine SnowGuards manufactures over 60 styles of snow retention devices. Pictured are their new SnowCatcher™ traditional pad-style snow guards, available in copper, zinc, lead-coated copper, Kynar-painted aluminum, Galvalume, and other metals. Alpine makes snow guards for just about any roof. Fax number 888-766-9994 Email info@alpinesnowguards.com

888-766-4273
www.alpinesnowguards.com

| Circle Reader Service #163

Extreme Performance Commercial Insulated Glass

8 Doors & windows

AZON USA Inc.

Warm-Light® spacer from Azon creat warm-edge glass unit that reduces t mal conductivity in any climatic co tion. The result is a dramatic reductio condensation on the glass surface in climates and less heat transfer in w climates, as well as lower utility c and a more comfortable interior envi ment. The polyurethane core in Wa Light spacer is 100 times less conduc than stainless steel or conventional minum spacer. Also enables design fl bility for a variety of building ty window sizes and styles, with stand and custom colors.

800-788-5942
www.warmedge.com

| Circle Reader Service

Cedar Roofing & Sidewall

7 Thermal & moisture protection

Cedar Shake & Shingle Bureau

CONTINUING EDUCATION AIA

Photo: Courtesy Victor International Corporation
Architect: Alexander Bogaerts & Associates

Cedar Shake & Shingle Bureau

The Cedar Shake & Shingle Bureau provides installation instructions and AIA Continuing Education Seminars. Member manufacturers produce Certi-label™ brand cedar shakes and shingles for roofing and sidewall applications. To ensure quality, independent third party inspections are conducted, plus quality assurance by the CSSB Cedar Quality Auditor. Certi-label brand products are a renewable resource, durable, impact- and wind-resistant, and available with either pressure-impregnated preservative or fire retardant treatment, in either pre-stained or pre-primed finishes.

60[illegible] 820-7700
www.cedarbureau.org

| Circle Reader Service #164

Swing Doors

8 Doors & windows

Eliason Corp.

Eliason Easy Swing® Doors are manu tured for use in supermarkets, rest rants, drug stores, specialty sto department stores, food service walk-in coolers. Choose from a variet colors and options. The HCP-10 is buil take the punishment from motori equipment and pallet jacks. Cust manufactured to meet your specif tions. Buy direct. Specify with co dence.

800-828-3655
www.eliasoncorp.com

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ight Diffusing Glass

Doors & windows

Goldray

Goldray's Satin Etch glass is a translucent clear glass with a light diffusing etched surface to which patterns may be applied. Satin Etch Glass diffuses light to provide privacy while still allowing high light transmission. The surface is easy to clean and has a high resistance to stains. This product can also be overlaid with graphics viewable from both sides. Visit Goldray's web site for more information on this and other innovative products.

800-640-3709
www.goldrayindustries.com

| Circle Reader Service #168

Glass Tunnel Project

8 Doors & windows

Nathan Allan Glass Studios, Inc.

For this project, 1/2-in. thick Crystal Series Cognac Glass was installed in Fendi's home office in Rome, Italy. The glass was pinned to the walls and fitted with Dorma Hardware's sliding systems for the entry and exit to this elaborate glass tunnel. All vertical panels are tempered, and ceiling panels are both tempered and laminated. This project was produced for Fendi and designed by Peter Marino Architects in New York City.

604-277-8533
www.nathanallan.com

| Circle Reader Service #171

urved Translucent FRP Panel Systems

Doors & windows

Major Industries

When your daylighting project demands something special, the TransCURVE™ translucent building panel system provides exceptional performance, with the added benefit of a striking, unique appearance. TransCURVE™ glazing panels feature a visually attractive aluminum grid core in several popular patterns giving panels a refined look while maintaining exceptional strength. TransCURVE™ also features a premium architectural-grade FRP exterior skin that blocks damaging UV rays while transmitting the beauty of natural light.

715-842-4616
www.majorskylights.com

| Circle Reader Service #169

Fire-Rated Glass with Internal Blinds

8 Doors & windows

Pilkington North America - Fire Protection Glass

Now you can have fire-rated glass with internal blinds. Long available in Europe, now available in North America, Pilkington Pyrostop is UL approved and listed for your 45 or 60 minute applications. Contact Technical Glass Products at for additional information.

800-426-0279
www.pilkington.com/fire

| Circle Reader Service #172

igh-Performance Windows

Doors & windows

Marvin Windows and Doors

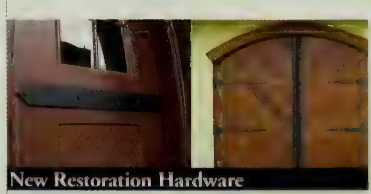
Bring the outside in with the new Ultimate Double Hung Magnum from Marvin Windows and Doors. The Ultimate Double Hung Magnum is an easy-to-operate, high-performance wood or clad-wood window available in very large sizes—a great solution for customers who require historically compliant windows that can meet commercial-level performance.

888-537-8266
www.marvin.com

| Circle Reader Service #170

Door Hardware Products

8 Doors & windows



Richards-Wilcox

Richards-Wilcox manufactures a line of specialty door hardware products for the antique reproduction market circa 1880 through 1950. With over 25 different types of decorative hinges, hinge straps, cast iron handrail brackets, and antique flat track, and hangers, Richards-Wilcox supplies many choices for swinging, hanging, and bi-fold door hardware in traditional building or historic applications such as coach houses, garages, roundhouses, barns and stables. For more information call Richards-Wilcox or visit their web site.

800-877-8456
www.rwhardware.com

| Circle Reader Service #173

Custom Wood Doors

8 Doors & windows

SUN-DOR-CO

These giant 14-ft.-tall Spanish Cedar panels with distressed wrought iron were designed by an architect and built by SUN-DOR-CO to add maximum elegance to an upscale restaurant. Six sets of these panels were incorporated into the building along with custom front-entry doors with the restaurant's logo etched into glass panels. This is just another example of SUN-DOR-CO's 50 years of expertise in building custom doors. You design it ... they'll build it. And, they'll do it in less than 60 days.

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www.sundorco.com

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Reduce Sound Transmission

9 Finishes

Acoustiblok®

Acoustiblok®: An easy and econon
product to reduce sound transmis
Amazing sound reduction, up to an
of 66 using standard construction
revolutionary it was awarded 1st plac
the British House of Commons
Britain's Noise Abatement Soc
Competition. Easy to install, 1/8
thick, cuts with box knife, can be na
stapled, or glued. No Construc
changes, less cost than other meth
UL approved for commercial buil
made in USA.

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www.acoustiblok.com

| Circle Reader Service

Resilient Athletic Flooring

9 Finishes

Abacus Sports Installations

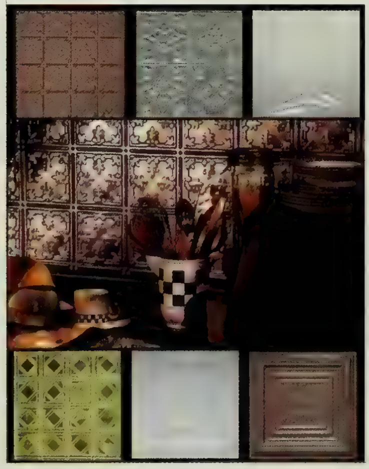
Abacus Sports Installations is proud to offer PADENPOR. PADENPOR resilient flooring is designed for multipurpose use, including all sports activities, dances, meetings, roller blading, etc. PADENPOR is a "dual durometer" multipurpose floor. Two products (rubber base-mat and urethane) are combined to introduce two different hardnesses to the floor. The rubber underlayment (LEED and Green certified) is soft, offering resilience/ergonomics/safety. The urethanes are hard, offering not only performance (ball rebound/playability) but also durability.

800-821-4557
www.abacussports.com

| Circle Reader Service #175

Plastic Ceiling Panels & Backsplashes

9 Finishes



Architectural Products by Outwater, LLC

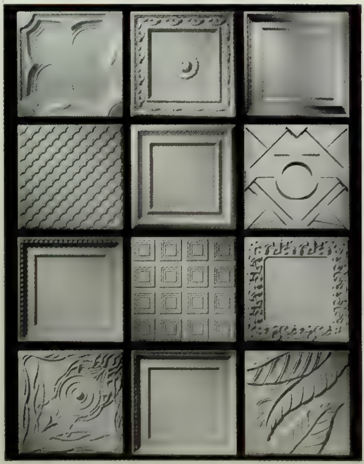
Offered at a fraction of the cost o
stainless steel counterparts, Outwa
new selection of highly detailed Cla
Fire Retardant Plastic Ceiling Panels
Backsplashes not only enable a per
professional installation by anyone w
out any necessary previous experie
they are available in a variety of diffe
traditional and contemporary finishe
accommodate any décor. Easy to cu
customized fabrication, they are wa
proof and mildew-resistant as wel
germ- and bacteria-free.

800-835-4400
www.outwater.com

| Circle Reader Service

Ornamental Plaster Ceiling Tiles

9 Finishes



Above View Mfg., By Tiles, Inc.

Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

414-744-7118
www.aboveview.com

| Circle Reader Service #176

Cast Metal Wall Surfacing

9 Finishes

Gage Corporation

Gagecast® is a cast metal wall surfa
material suitable for a variety of inte
architectural applications where
terns that feature high luster, re
durability, and cost effective installa
are a requirement. Twenty-eight des
are standard, however, custom collab
tion is encouraged. Gagecast® is
component of Gage Vertical Surfac
Contact the factory for product litera
and selected samples.

800-786-4243
www.gageverticalsurfacing.com

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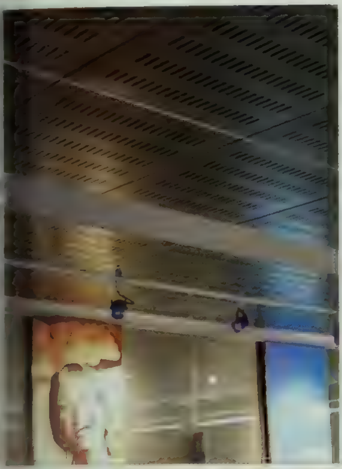
deidre_allen@McGraw-Hill.com

Perforated Metal Ceilings

Finishes



Gage Corporation

Setting a new standard for perforated metal ceilings, Gage introduces the 700 Series of perforated metal ceilings manufactured from 50% recycled aluminum. Standard designs include five distinctive finishes and 14 different perforation patterns. Select and custom designs are also available. Contact the Gage factory for literature and samples.

800-786-4243
www.gageceilings.com

| Circle Reader Service #180

Porcelain Stone

9 Finishes

Viva Ceramica

Viva has added to their philosophy the idea of not weighing down this world with useless products, copies of things that have already been seen, interchangeable repetitions of objects that are born today and die out with fashion. IRIDIUM is created to be exclusive, for those who understand and know how to appreciate the value of things that last and the work and passion that is part and parcel of their ceramic workshop. A metallic glaze with iridescent tones creates an absolutely new type of surface. Ideal for homes, offices, shops, and public venues.

www.cerviva.it

| Circle Reader Service #183

Decorative Wall Panels

Finishes

Kemlite Company

frpDesign Solutions is a family of decorative wall panels that provides an alternative to traditional wall coverings such as ceramic tile, wood paneling or vinyl wall coverings. Offering both functionality and design, products in the frpDesign Solutions line are made of a moisture-resistant frp panel with a decorative finish that includes myriad colors, patterns, and woodgrains, as well as a tile-look panel. Available with over 500 hundred choices, frpDesign Solutions is easy to install and maintain. For more information, visit Kemlite on the web.

888-332-6377
www.frpdesignsolutions.com

| Circle Reader Service #181

Custom Bronze Plaques

10 Specialties

Custom Home Accessories, Inc.

Bronze plaques are used to identify, commemorate or recognize people, places or events. They accomplish this more professionally and with more distinction than any other medium available. Bronze plaques can be produced in any size with various border styles, letter styles, and finishes. No other product matches the permanence or beauty of a bronze plaque.

800-265-0041
www.mailboxes.info

| Circle Reader Service #184

Reduce Impact Noise

Finishes

The Noble Company

NobleSeal® SIS is a sheet membrane that reduces the impact noise produced by hard surface flooring (like tile and hardwood floors). SIS is only 3/64-in.-thick so it minimizes problems with transitions and the need to alter door and cabinet heights. It is effective at reducing noise (IIC=62; STC=59). SIS can be installed over all common substrates, even gypsum concrete and radiant heating systems. SIS can also protect thin-set tile from cracking and provide waterproofing. Visit their web site. Email richard@noblecompany.com

800-878-5788
www.noblecompany.com

| Circle Reader Service #182

Translucent Water Features

10 Specialties

Harmonic Environments, Inc.

Harmonic Environments is the only waterfall manufacturer to offer ZonePure™ water purification systems with every waterfall, making their products uniquely suited for healthcare, hospitality, office, or anywhere clean and healthy water features are desired. Each custom waterfall can be created using environmentally friendly materials. From low emissions components to recycled glass, Harmonic Environments is committed to providing architects and interior designers with Green design solutions.

866-440-0074
www.harmonicenvironments.com

| Circle Reader Service #185

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Glass Rail Brackets

10 Specialties

Livers Bronze Company

Yet another new glass rail bracket design from Livers—the modern RB-1074 rail bracket. It complements their Struct-U-Rail© glass-supported railing system and provides a decorative flare to enhance your glass railing. It accepts a 1 1/2-in. diameter metal hand railing and offers a wide selection of powder coat finishes. Since building codes require a continuous metal railing with glass railing systems, Livers Bronze manufactures a stylish selection of brackets like no other that meet codes without compromising design.

816-300-2828
www.liversbronze.com

| Circle Reader Service #186

Canopies

10 Specialties

Mapes Industries, Inc.

Mapes Industries manufactures a complete line of hanger rod canopies and walkway covers. These pre-engineered canopies incorporate roll formed and extruded roof decking, flat or corrugated, with projections up to 12-ft. With multiple fascia profiles, the canopies are a cost effective alternative to jobsite built designs. Custom colors are also available. Specially designed brackets allow these canopies to be attached to any wall surface including EIFS, metal buildings and CMU. For more information, please call or visit their web site.

800-228-2391
www.mapes.com

| Circle Reader Service #187

Art Presentation

10 Specialties

Walker Display Incorporated

Life's all about change and so is Walker Display when it comes to art presentation. The Walker system frees you to explore all your options. No-More-Holes frees you to rearrange your artwork with ease and speed. Embrace change!

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www.walkerdisplay.com

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Ceiling Fans & Lighting

11 Equipment

G Squared

Clean and simple, the Flyte ceiling fa
a GOOD DESIGN Award winner.
brushed nickel with mahogany bl
and all white versions on their Web
Includes 100W dimmable light and
control system, remote control avail
Cap for non-light use included. Whi
quiet, powerful and beautifully m
this timeless design can be used o
1/2-ft. ceilings or on cathedral ceil
with optional downrods up to
Suitable for sloped ceilings up to
Lifetime warranty. To buy high-de
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| Circle Reader Service

Modular Guardrail System

11 Equipment

Kee Industrial Products, Inc.

KeeGuard® fall protection systems
independently tested to meet or ex
OSHA Standard CFR 29 1910.23
1926.500, which require the presence
barrier within 6-ft. of roof edges.
modular, freestanding guardrail sys
installs easily on flat or low-sloped r
without penetrating the roof membr
It is galvanized for corrosion resista
and features a new "drop in"-style fit
component that reduces installa
time in half and accommodates m
varied design configurations such
curved roofs. KeeGuard systems are
available to fit skylights, roof hatc
stairwells and walkways.

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www.KeeGuard.com

| Circle Reader Service

Public Seating

12 Furnishings

Arconas

Arconas, public seating specialists,
vides modular public seating solut
for high impact waiting areas in:
ports; bus, rail and ferry termi
healthcare; courthouses; and unive
ties. Their award-winning, high perfo
ance public seating lines are designe
the highest standards of durability, c
fort, safety and security, with bui
easy maintenance features.

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www.arconas.com

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Saunas

13 Special construction

Finlandia Sauna Products, Inc.

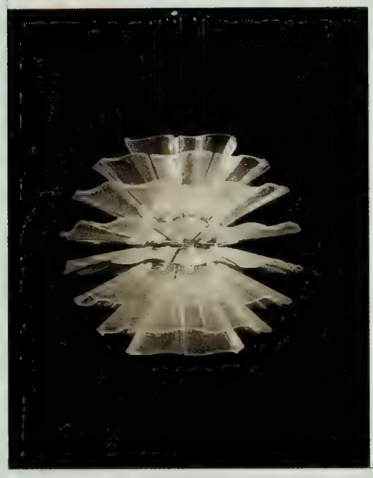
Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as an affordable luxury that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish made electric heater, a prehung door with choice of glass, and all necessary accessories.

800-354-3342
www.finlandiasauna.com

| Circle Reader Service #192

Contemporary Glamour

16 Electrical



Charles Loomis

Experience the glamour and brilliance of haute couture with "Organza," a gorgeous new design from Charles Loomis, Inc. Organza's contemporary flair and refined elegance will enhance any environment. Please contact the company for specifications and pricing.

800-755-0471
www.charlesloomis.com

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Elegant Residential Elevators

14 Conveying systems

National Wheel-O-Vator Co., Inc.

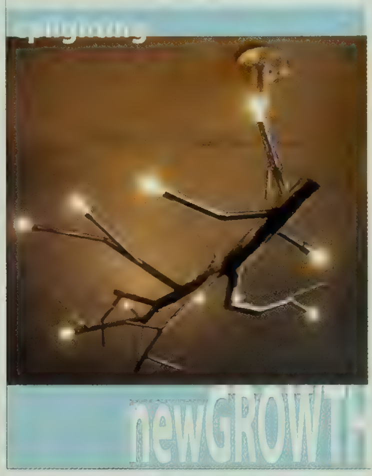
National Wheel-O-Vator manufactures elegant residential elevators that are beautifully styled and customized to fit almost any application. They are backed by an industry leading three-year warranty. Each Destiny residential elevator is skillfully constructed to blend with the home's interior design. Come see the Destiny residential elevator at the International Builders' Show, Booth #W5394. National Wheel-O-Vator's product line also includes commercial LU/LA elevators, vertical platform lifts, and inclined platform lifts. Visit their web site for more information.

800-968-5438
www.wheelovator.com
IBS Booth #W5394

| Circle Reader Service #193

Custom Light Fixtures

16 Electrical



CP Lighting

CPLIGHTING introduces the *newGROWTH* chandelier. Custom fabricated from brushed aluminum, these UL listed fixtures are a modern sculptural interpretation of fallen branches. Like real trees, no two *newGROWTH* fixtures are ever alike. Each fixture is built to suit your specific project needs utilizing line-voltage type JCD halogen bulbs. Please visit their web site to see their complete line of modern light fixtures designed by Christopher Poehlmann including their recycled acrylic *Popsicle Pendant* series.

866-597-4800
www.cplighting.com

| Circle Reader Service #196

Air Conditioning Grilles

15 Mechanical

Worth Home Products

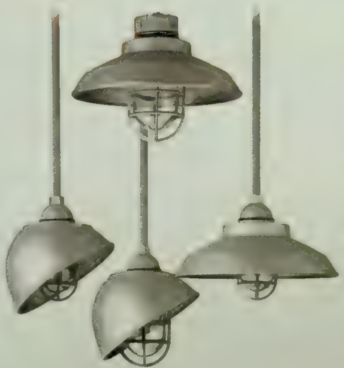
Worth Home Products provides an attractive alternative to stamped metal grilles. Worth's computer-aided design ensures high efficient air flow and won't void mechanical warranties like site built grilles. This patent-pending product is made from paint-grade Poplar and Birch woods and discreetly blends into ceilings or walls. Its locking system provides a safe and easy installation. Over 36 standard wooden grille sizes and custom services are available for quick delivery.

713-660-0025
www.worthhomeproducts.com

| Circle Reader Service #194

Vapor-Tight Lighting Fixtures

16 Electrical



Luraline

Vanguard vapor-tight lighting fixtures are ideal for industrial styled interiors and exterior settings requiring extra protection. Suitable for use in wet locations, all fixtures are fully gasketted to seal against moisture and exposure to the elements. Available in pendant, ceiling and wall-mount configurations, with incandescent, compact fluorescent or H.I.D. lamping.

800-940-6588
www.luraline.com

| Circle Reader Service #197

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CONSTRUCTION

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O YOU, A CANVAS.

Because there's so much more that goes into specifying a construction product, there's so much more going into the McGraw-Hill Construction Network for products coming in 2006. Built on McGraw-Hill Construction Sweets' 100-year history of connecting you to product information and intelligence, it's designed to help you search, specify and document products with more convenience and confidence than ever before.

Deeper content. Wider choices. Faster searches. Higher productivity. Projects. Applications. Green products. Trends. Ideas. A better online specification experience than any single product web site or search engine listing can deliver alone. At your fingertips. One connecting point. So you can get what you need to realize your vision.

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NO PURCHASE NECESSARY. A PURCHASE WILL NOT IMPROVE YOUR CHANCES OF WINNING. TO ENTER: go to products.construction.com and fill in the drawing entry form. One entry per person per day. There will be 1 Grand Prize trip for 2 to the 2006 Venice Biennale awarded. Entries for the Venice Biennale trip must be received after November 8, 2005 and no later than July 14, 2006. The Venice Biennale Grand prize winner will be selected on July 15, 2006. The Venice Biennale trip must be taken between September 15, 2006 to November 30, 2006. Approx. retail value of trip: $10,000. Monthly drawings will be held for Sony Cyber-shot digital cameras. Entries for the monthly camera drawings must be received after November 8, 2005 and no later than December 30, 2006. There will be 14 prizes awarded. Camera drawings will take place on the 30th of each month beginning November 8, 2005 and ending December 30, 2006. Approximate retail value of prize: $350 per camera. Total Award Retail value: $15,000. Employees of The McGraw-Hill Companies, Inc. and their immediate family members and their advertising agencies are not eligible. All federal, state and/or local regulations apply. Void where prohibited by law. MCGH reserves the right to substitute a prize of equal or comparable value if any prize becomes unavailable. For the complete official rules, contact Deborah Smikle-Davis, Director of Marketing Communications, McGraw-Hill Construction, 2 Penn Plaza, 9th floor, NY, NY 10121-2298 or visit www.products.construction.com.

MARNP61

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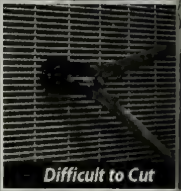
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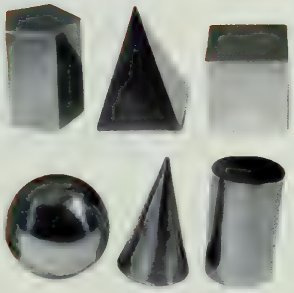

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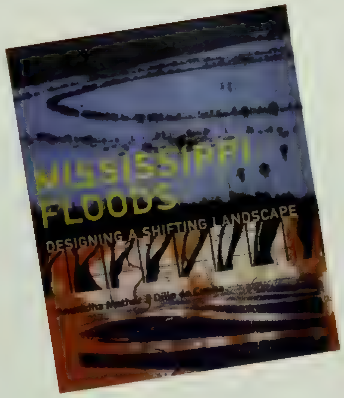
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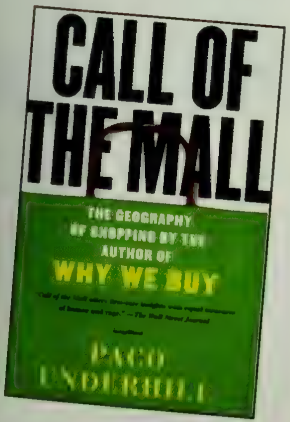

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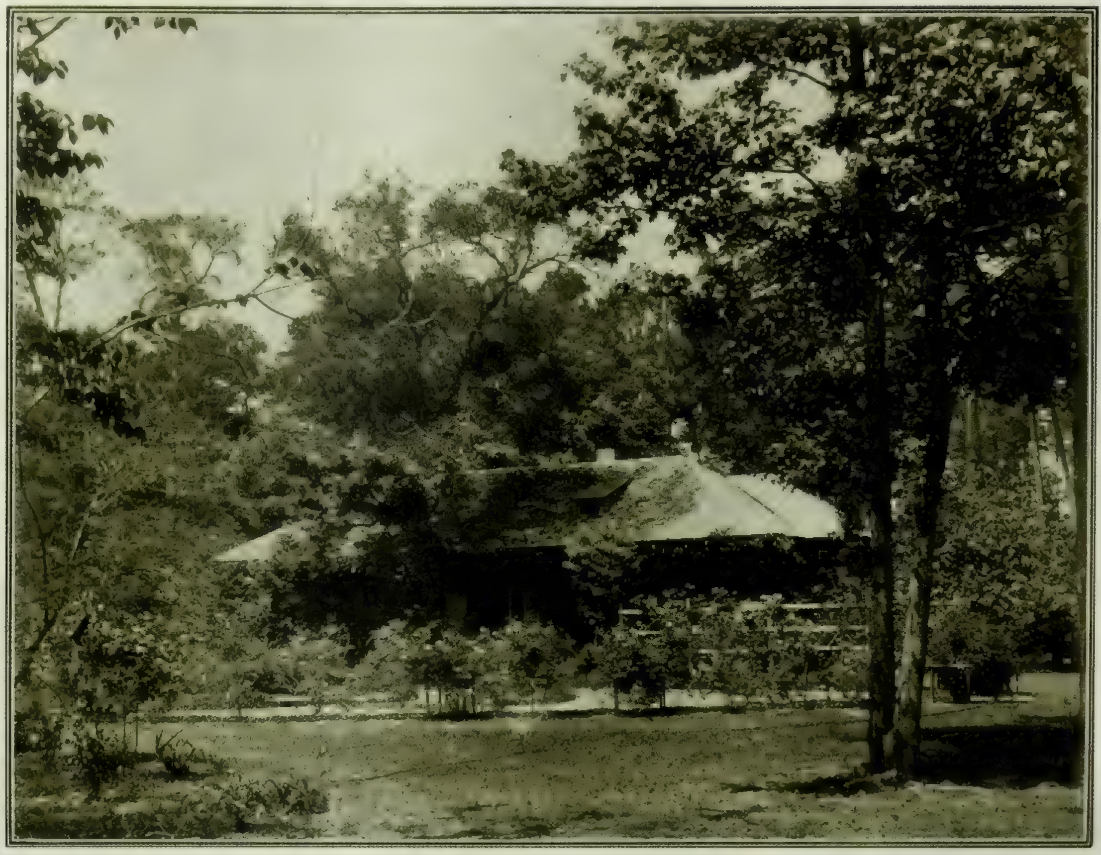


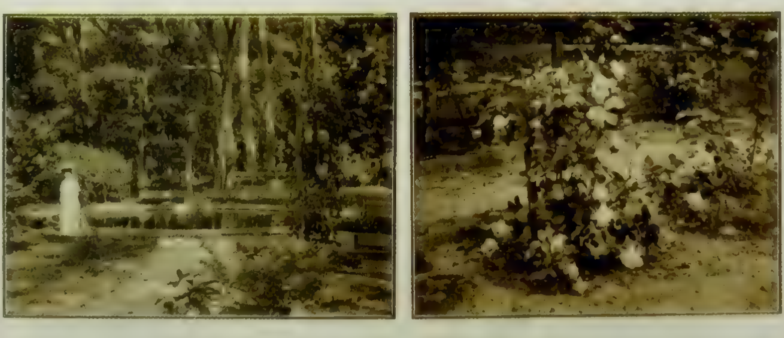
FROM ARCHITECTURAL RECORD June 1905

Sullivan's cottage in Ocean Springs, Mississippi

Among the tragic losses of architecturally significant buildings along the Gulf Coast are the little-known vacation cottage and landscaped grounds that Louis Sullivan designed in 1890 in Ocean Springs, Mississippi, near Biloxi. Sullivan had gone down to the Gulf of Mexico in the winter months of 1889–90 with James and Helen Charnley, for whom Adler & Sullivan (and employee, Frank Lloyd Wright) would create the now-landmarked house in Chicago in 1891–92. All three fell in love with Ocean Springs, and there Sullivan soon built a house and guest house for the Charnleys, plus a one-story bungalow and outbuildings for himself on the adjoining property. His cottage's deep, overhanging roofs sheltered large verandas to offer protection from the sun during the warm months, and large windows fostered cross ventilation. A lover of gardening, Sullivan landscaped the grounds to include two rose garde the larger of which was arranged in concentric circles. Photographs of the house, immersed in a setting of oaks, hickory, and pine trees, were publishe in ARCHITECTURAL RECORD in 1905, accompanied by a lyrical essay by Lyndon F Smith, Sullivan's associate on the Bayard Building in New York (1899). Unfortunately, the house and its plantings were totally destroyed by Hurrican Katrina. There is hope, however, for the two Charnley houses. Severely damaged, they await a prospective buyer who will restore them. *Suzanne Stephe*

This page is the first in a series devoted to the Gulf Coast's historic architecture destroyed or damaged by Hurricane Katrina.

Sullivan designed both the bungalow (above) and the landscape for his vacation retreat. The woman standing by the pool (right) is thought to be his wife, Margaret.



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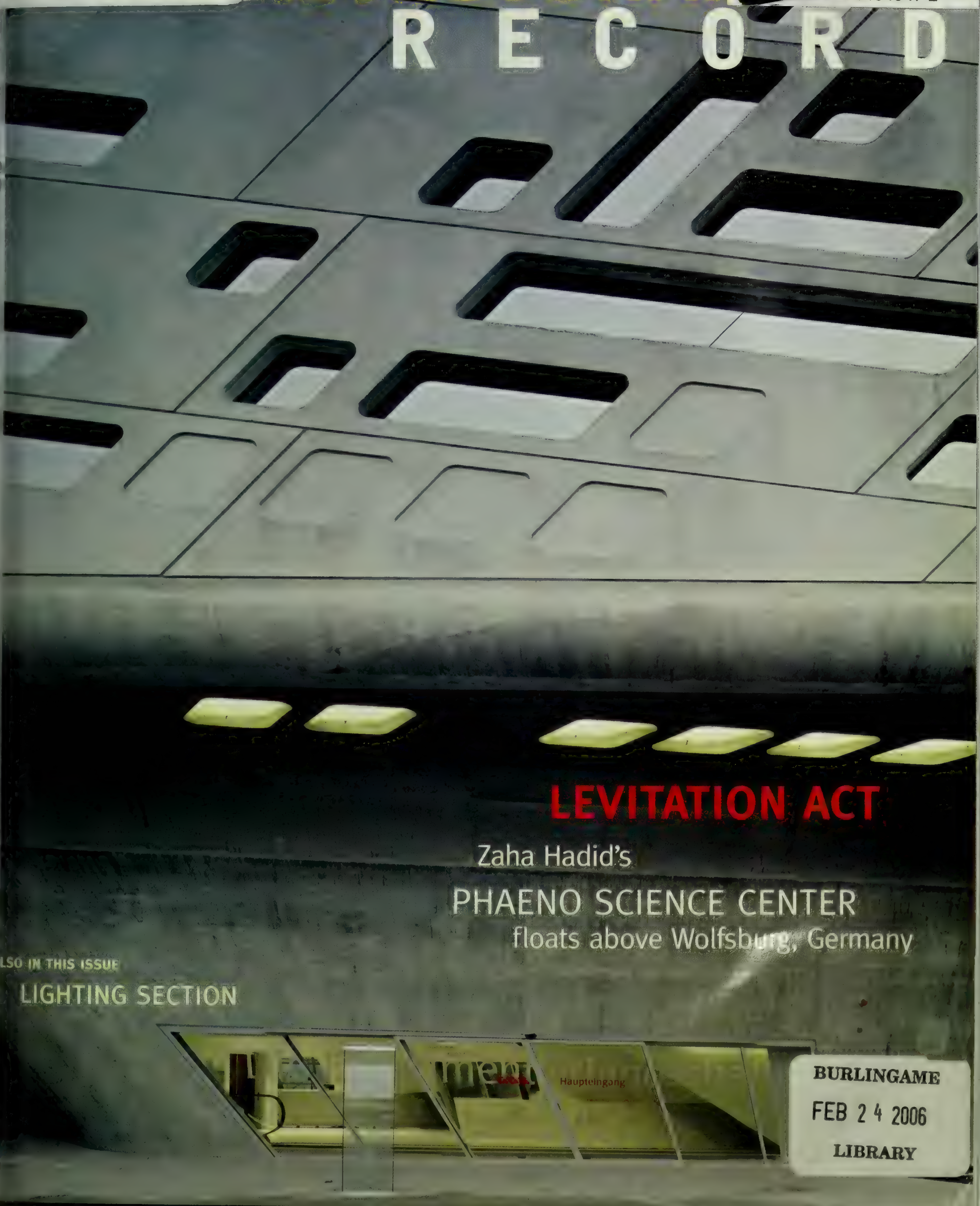

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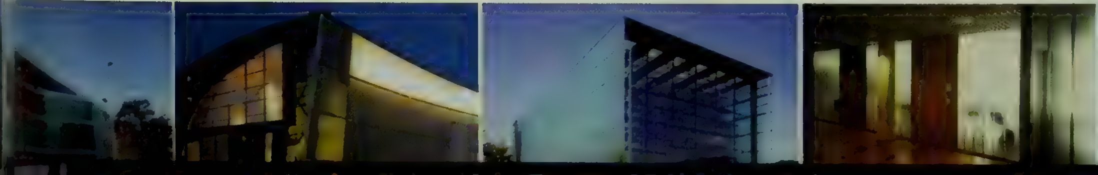

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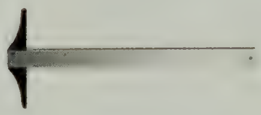

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On the Cover: *phaeno Science Center, by Zaha Hadid Architects.*
Photograph by Klemens Ortmeyer
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Phaeno Science Center by Zaha Hadid
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Project Portfolio

Zaha Hadid creates fluid architecture for the Phaeno Science Center in Wolfsburg, Germany; EMBT does more than transform a dour Neoclassical fresh-food market into a flying carpet of brilliant colors and agitated forms in Barcelona; SOM gives an iconic Detroit office, hotel, and retail center a radical renovation; and buildingstudio designs a modern community space, Bridges Center, that helps mend social divides in Memphis.

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Building Types Study

Instead of perpetuating sprawl, these 10 mid-rise, multifamily housing projects offer attractive alternatives to the unchecked development of single-family communities. All of these projects embody a socially responsible approach to design, and a modern sensibility, often working within a modest budget.

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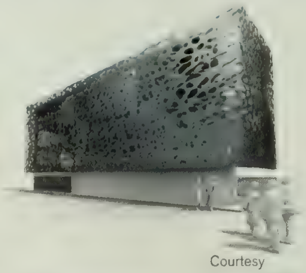
From the Field: Editor's Journal

To the Gulf, Parts I, II, and III, now updated with images. Robert Ivy's first-person report on his journey to the Persian Gulf for a gathering of architecture critics sponsored by the Aga Khan Award for Architecture finds him involved in discussions with Middle-Eastern architects and engineers as well as architecture critics from all over the globe.



Courtesy Thom Faulders

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Bay Area architect Thom Faulders is energized by contrasts and surfaces, while the U.S. Department of Energy's Solar Decathlon winners look to the sun for power and inspiration.

Lighting Special Section

This month we take you to London, to Paris, to Seattle–three cultural hubs playing host to the work of the most innovative lighting designers in the world.

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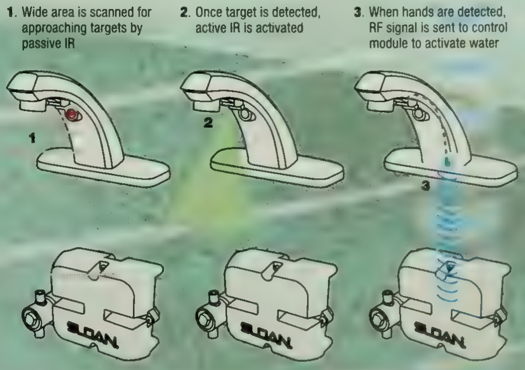
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A League of Our Own

Editorial

By **Robert Ivy, FAIA**

No branch of art covers a wider field than architecture; no branch ministers more to the comfort, luxury, and convenience of the people; yet none receives less attention and encouragement from public sources in America." While those salient points might have been written yesterday, they were penned by a group of young architects on January 18, 1881, who set out to redress a list of grievances. The group, which included Cass Gilbert, was called the Architectural League. Initially rooted in New York City, it has grown and prospered, sharing the story about architecture with the larger culture. We celebrate its 125th anniversary this year.

While associations such as the AIA primarily and justly concern themselves with professional matters, the league has always held the art of architecture at its core: Earliest meetings consisted of sketching sessions that would ultimately result in exhibitions of members' work. Along the way, the organization expanded its brief to include lectures, symposia, competitions, and social events, never abandoning the understanding of its central mission. Hugh Ferriss, architect and delineator extraordinaire, captured an essential organizational goal in 1944: "I should think this League would be proud to assist in the reintegration of two of Man's greatest impulses: the impulse to make things work and the impulse to make them beautiful."

Rosalie Genevro, the organization's executive director, echoes Ferriss's statement when she explains that the league "talks about New York, not as an advocacy group, but in thinking about how to make New York more beautiful." Along the way, the league has examined new forms of housing, discussed the role of skyscrapers, considered what makes a productive park project—all of which "resonate with the early years," she says. The discussions often prove as crucial as the work, leavening all our thinking for subsequent projects.

Furthermore, the league has always served as a meeting ground for people outside the formal discipline of architecture, including planners, graphic artists, writers, and patrons of the arts. Here has been a place where the educated public could encounter this seemingly esoteric subject; where it could be demystified for them in the process; and where they could be introduced to real architects in high-minded symposia or rambunctious gatherings, such as the league's fabled Beaux-Arts Ball.

ARCHITECTURAL RECORD, *among other organizations, has maintained a strong relationship with the league, providing members and leaders of the it, from the early days of two-term president Russell Sturgis (*RECORD*'s esteemed 19th-century critic) until today. Current deputy editor Suzanne Stephens and contributing editor Michael Sorkin continue the tradition, serving as longtime board members.*

It might be tempting for readers outside of Gotham to wave off the league as parochial (New Yorkers do tend to talk to each other), if its activities and programs didn't reach beyond the five boroughs. On the contrary, architects in San Francisco often know just whom the league has chosen for its current season of "Emerging Voices," a vital system of recognizing significant new talent in North America, or its Young Architect program, for example, which highlights the work of architects who have finished school within the past 10 years.

Current president Wendy Evans Joseph notes the league's commitment to "the larger community," which has attracted international interest, as well as the fact that the league is "opening itself to the globalization of architecture." Though she credits the league for helping to heighten public awareness, "that doesn't necessarily translate into public funding." There is homework left to be done.

We recognize the work of organizations that are educating and involving the public in architecture, such as the National Building Museum, the American Architectural Foundation, and the Chicago Architectural Foundation. January 18, however, signals a unique moment, when 125 years ago the art of architecture took a bold step forward. So to the young architects who kicked it off then, to their progeny who continue the tradition, and to all who love architecture, we salute the Architectural League.

Robert Ivy

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Letters

Towering out of context

was struck by the very nature of the Agbar Tower, featured in your January issue [page 88], and couldn't agree more with the assessment that the "inky surface appears to ripple under a liquid film, sparkling through a jigsaw-puzzle of color." I am also intrigued by the concrete-bearing-wall technology, a wonderful approach with an old-school solution to modern materials and forms.

I do, however, take exception to the treatment of the city that is home to this "tower." The article was desperately lacking in taking the architect, the planners, and the developer to task for allowing and, n fact, encouraging this apparent slap in the face to the people of the city. To state that "Barcelona planners hope to spur growth without sacrificing the historic core" is to imply that the historic core is simply a "place," and that once outside of that core, one should not be restricted to appropriate development, but rather should flaunt one's separation.

ARCHITECTURAL RECORD needs to look beyond the pretty pictures and the glistening jewels and the "starchitects" to the more challenging question: Was it the right building to put here? Do not stop showing the very best, the most interesting, the most creative projects out there—we both want and need to see them. But we also need to have more critical assessments of the buildings so that we can see both the wonder and the things that do *not* work so well.

David C. Anderson, AIA
Golden, Colo.

Museum musings

Thank you for James Russell's November feature, "Architectural Culture Versus Museum Culture" [page 82], and thank you for including the images of the Akron Museum of Art's project. I was delighted to see the two-page headline that encapsulated why museum design is now so important—because it is one of architecture's only venues for artistic growth. I could not agree more (at least for us in the U.S.). I am glad Russell takes the museum field to task for being too safe. Though one admires Renzo Piano's sensitive galleries and excellent grasp of the budgetary, security, and climate control issues for museums, the buildings are simply uninspiring. If a museum is merely an articulated warehouse, what does that say about how we regard art?

When the Art Gallery of Ontario spoke with artists in the community, it turned out they wanted wood floors in Frank Gehry's new contemporary art galleries. He, of course, wanted concrete. As nice as concrete can be, I think the artists wanted their work to be shown in a space that was more special than a SAM's Club warehouse.

I hope our new building will hit both goals: exciting symbolic forms and also functional spaces and galleries. You and others will be the judge.

Mitchell Kahan
Director
Akron Art Museum
Akron, Ohio

It's not easy being green

I read your December editorial ["Green and Proud of It," page 19] with great interest. As you so eloquently mentioned, practices like Foster and Partners have been designing "green" for a few decades, creating buildings from a wide variety of materials and subassemblies that would not be regarded by most in the U.S. as "building materials." Having been educated as an architect in the U.K., I remain speechless about the lack of innovation in building technology and building design in the U.S. Perhaps it's because such a small fraction of our built environment has seen the hand of an architect; perhaps it's because most builders think "stick framing" when it comes to small-scale and domestic buildings; maybe it's because we suffer from a "not invented here" approach to new products from around the world.

Ever so slowly we are seeing the emergence of products that for many years have been available overseas. While I'm not privy to the strategy for your new green magazine you mentioned, I hope it shows architects and builders how technologies from abroad can transform the costs and the sustainability of so many buildings in this country. Getting those products into the U.S. is never easy, but perhaps your magazine could prompt some enterprising organizations to begin thinking outside of their construction technology boxes. With the right backing and international partnerships, perhaps we could all benefit from a new wave of effective, highly sustainable and proven products and assemblies for the U.S. market.

Phil Allsopp
Huntington Woods, Mich.

Seen, not heard

Reading most articles on urban sprawl [Residential section, October 2005, page 209], it is not hard to imagine the writers being single, or married with no children, and no plans for them, either. Most proponents of the "vertical not horizontal" growth do not seem to have a grasp on the reality of families in the traditional sense. I have never seen a profession that is so antichildren or ignores the real needs of a family as the architectural profession does. We are called on to design schools, playgrounds, and other child-intensive environments. However, when it comes to housing, children and traditional family life are better not seen or heard or dealt with.

Pedro Diez
Miami

CORRECTIONS

A photograph of Luce et Studio Architects' Nissan Design America in the December Vanguard issue [page 80] was miscredited. The photographer was Peter Bernheim. In the same issue [page 96], it was stated that Evan Douglis has been the undergraduate chair of Pratt Institute's School of Architecture since 1993. In fact, he has held this position since 2003. The November issue's Product Resource section included an incorrect e-mail address for Dunn-Edwards. The correct address is www.dunnedwards.com. A caption in the December feature "Young Turks in Big Tents" [page 70] incorrectly referred to the Persian Gulf as the Arabian Gulf. A January news item [page 36] stated that the new Getty Villa in Los Angeles would be an educational center dedicated to the study of the arts and cultures of ancient Rome, Greece, and "Eritrea." The latter should have read Etruria. Robert Campbell's January Critique [page 57] stated that the position of president of the RIBA is held by George Ferguson. The current president of the RIBA is Jack Pringle.

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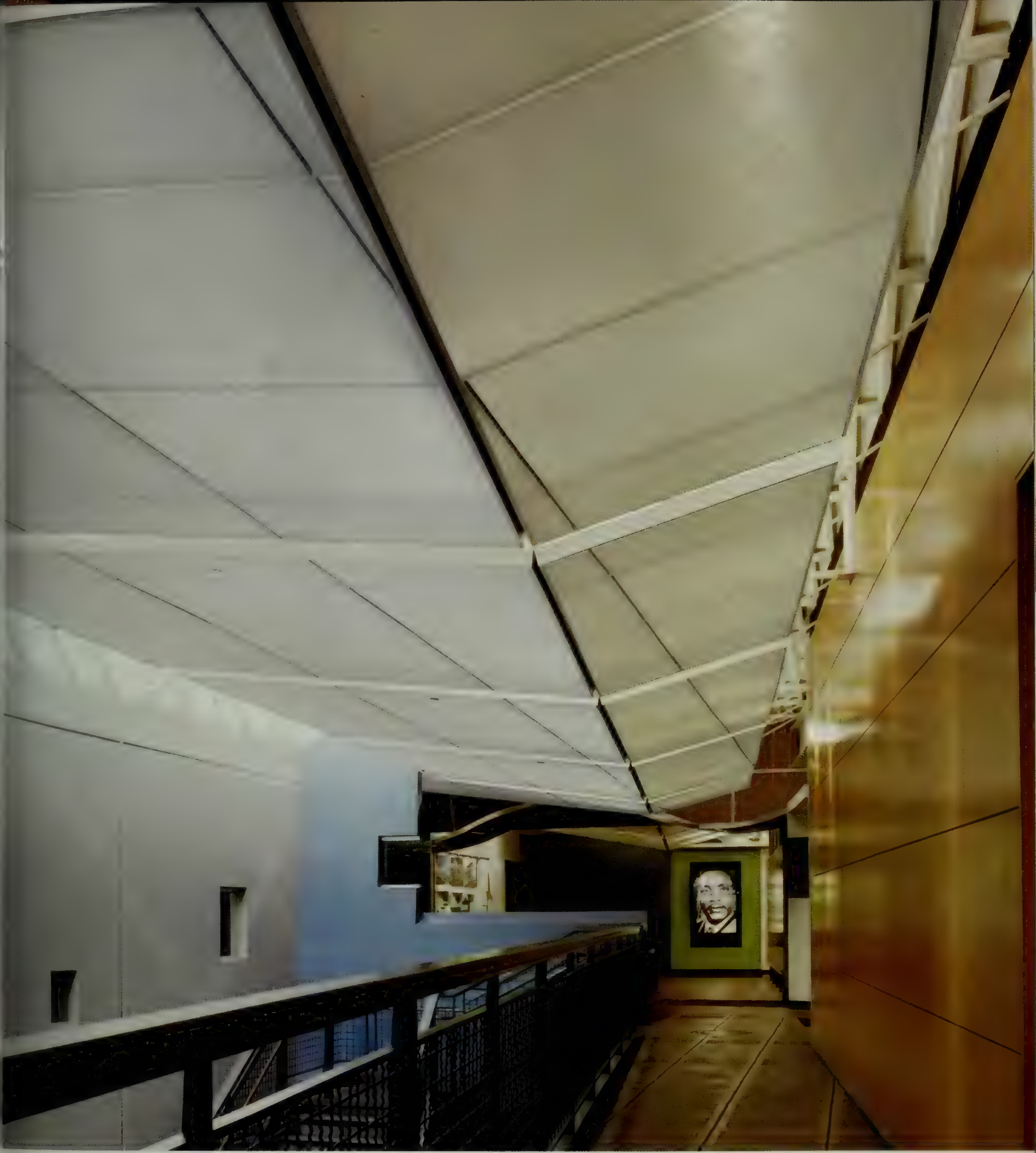

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Record News

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2006 AIA Honor Awards

On January 13, the AIA announced the 2006 recipients of the AIA Honor Awards, the profession's highest recognition of works in architecture, interior architecture, and urban design. Selected from more than 680 submissions, 30 recipients will be honored in June at the AIA National Convention and Design Exposition in Los Angeles.
Sam Lubell

English Residence, by Chu + Gooding Architects.

Honor Awards for Architecture

Ballard Library and Neighborhood Service Center, Seattle, by Bohlin Cywinski Jackson

Bigelow Chapel, New Brighton, Minn., by Hammel, Green and Abrahamson

Frieder Burda Collection Museum, Baden-Baden, Germany, by Richard Meier & Partners Architects, with associate architect Peter W. Kruse-Freier Architekt

Children's Museum of Pittsburgh, by Koning Eizenberg Architecture, with Perkins Eastman Architects

Joseph A. Steger Student Life Center, University of Cincinnati, by Moore Ruble Yudell Architects & Planners, with associate architect glaserworks

Museo Picasso Malaga, Malaga, Spain, by Gluckman Mayner Architects, with associate architect Camara/Martin Delgado Arquitectos

TRUMPF Customer and Administration Building, Ditzingen, Germany, by Barkow Leibinger Architects

Visiting Artists House, Geyserville, Calif., by Jim Jennings Architecture

Washington Convention Center, Washington, D.C., by TVS D&P Mariani, with associate architects Thompson Ventulett Stainback, Devrouax & Purnell Architects Planners, and Mariani Architects Engineers

Washington State Legislative Building Rehabilitation, Olympia, Wash., by SRG Partnership, with associate architect Einhorn Yaffee Prescott

William J. Clinton Presidential Center, Little Rock, Ark., by Polshek Partnership Architects, with associate architects Polk Stanley Rowland Curzon Porter Architects, Witsell Evans Rasco Architects and Planners, and Woods Caradine Architects

Honor Awards for Interior Architecture

Bizarre, Omaha, Nebr., by Randy Brown Architects

English Residence, Beverly Hills, Calif., by Chu + Gooding Architects and interior designer Kay Kollar Design

Google Headquarters, Mountain View, Calif., by Clive Wilkinson Architects

Karla, Miami, by Rene Gonzalez Architect

Mother London, London, by Clive Wilkinson Architects

Nissan Design America, Farmington Hills, Mich., by design architect Luce et Studio Architects, with executive architect Albert Kahn Associates

The Royal Bank of Scotland PLC, Houston, by DMJM Rottet

Schepens Eye Research Institute Laboratory Renovation, Boston, by Payette

Skillman Library, Lafayette College, Easton, Pa., by Ann Beha Architects

Temporary Theater, Portland, Ore., by BOORA Architects

Woolly Mammoth Theatre Company, Washington, D.C., by McInturff Architects

Honor Awards for Regional and Urban Design

The Arc: A Formal Structure for a Palestinian State, West Bank and Gaza, Palestine, by Suisman Urban Design

Ballard Library and Neighborhood Service Center, by Bohlin Cywinski Jackson.

Museo Picasso Malaga, by Gluckman Mayner Architects.

Chippewa/Cree Reservation Plan, Box Elder, Mont., by Ferdinand S. Johns, AIA, with Allison Orr and the Community Design Center, Montana State University (MSU) School of Architecture

Lloyd Crossing Sustainable Urban Design Plan, Portland, Ore., by Mithun Architects + Designers + Planners

Millennium Park, Chicago, by Skidmore, Owings & Merrill

North Point, municipalities of Cambridge, Boston, and Somerville, Mass., by CBT/Childs Bertman Tseckares, with associate architect Greenberg Consultants

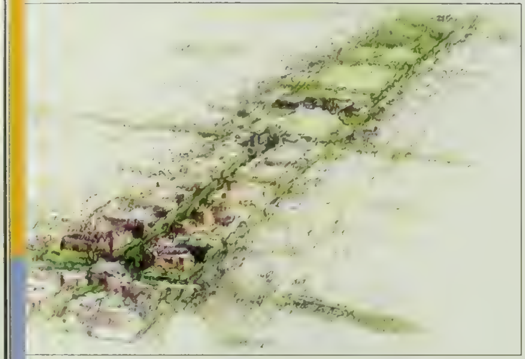
Swiss Government Piazza, Bern, Switzerland, by Lee & Mundwiler Architects, with associate architect Stauffenegger & Stutz

Martin Luther King Plaza Revitalization, Philadelphia, by Torti Gallas and Partners

University Square, University of British Columbia, Vancouver, by Moore Ruble Yudell Architects & Planners, with associate architect Hughes Condon Marler: Architects

SPECIAL HURRICANE REPORT

New Orleans reveals first master plan for rebuilding



The committee presented a rough conceptual sketch of a future New Orleans neighborhood.

On January 11, members of the Urban Planning Committee of New Orleans Mayor Ray Nagin's "Bring New Orleans Back Commission" (BNOBC) presented their long-term vision for rebuilding the city. Dubbed "comprehensive and aggressive" by committee chair Joseph Canizaro, a local real estate developer, and "controversial" by Mayor Nagin, the plan marries visionary concepts for a "bigger, better New Orleans" with tangible deadlines for participants.

John Beckman, principal with Philadelphia firm Wallace Roberts & Todd (WRT), master planners for the BNOBC, detailed the plan to a packed (and often contentious) room at the Sheraton New Orleans. After Katrina, 50 percent of New Orleans houses were flooded with at least 4 feet of water, Beckman said. The storm ravaged about 110,000 houses, and at least 25,000 of the city's 38,000 historically significant properties were damaged.

The urban planning committee's rebuilding framework includes not only a call for greater flood and storm water protection, but suggests, in some cases, using canals and canal edges for park space and setting up a citywide light-rail transit network to connect neighborhoods, downtown, the airport, and Baton Rouge and the Gulf Coast. The plan also embarks on improving neighborhood infrastructure, schools, cultural and community facilities, health facilities, and retail.

The plan is based on the premise that the federal government will provide the promised hurricane protection system, Canizaro said. Before making specific neighborhood plans, urban planners are awaiting FEMA's release of its base-flood-elevation maps, which could determine where redevelopment will be feasible.

The committee's plan encourages Congress to pass the Baker Bill, which would finance a federal buyout of heavily damaged homes for 100 percent of their pre-Katrina market value, less mortgage and insurance. The plan also supports creation of a Crescent City Rebuilding Authority, composed of paid professionals, to manage redevelopment. Beckman said the authority should have about a 10-year life span. He outlined the committee's ideas for financial support for the plan, including bonding options, tax credit incentives, below-market interest-rate loans, and separate funding institutions. The committee proposed a four-month delay in the issuance of building permits in heavily damaged areas, allowing time to assess their viability.

One of the biggest challenges faced by the committee, admitted Canizaro, is devising a long-term goal in the face of so many unknowns, including future population estimates and revenue streams. Meanwhile, the state is expected to release its own plans for rebuilding, and it is not known how the plans will merge. One of the primary concerns among local residents is that they will be excluded from the rebuilding process. Building committee director Reed Kroloff, dean of Tulane University's school of architecture, pledged to utilize all means, including the Internet and public access channels, to include residents in planning the rebuilding.

Residents are understandably wary, especially in light of the city's quick slating for demolition of storm-damaged homes in some neighborhoods. Initially, 55,000 homes were marked for demolitio says Tami Frazier, a spokesperson with the mayor's office. Citizens fil a lawsuit against the city to halt th demolition, and on January 18 a federal court ruled that homeowners must be given seven to 10 day notice before demolition. Locals also expressed concern that a thir party panel composed largely of nonresidents would determine the viability of neighborhoods that the feared were being viewed more as plans and abstract concepts than as their homes.

The commission now has its work cut out for it if it is to meet its self-imposed deadlines. By January 20, Kroloff and local architect Ray Manning, AIA, were to begin formin neighborhood planning teams. The two have pledged to have the grou organized by February 20, and to have them identify the number of residents committed to returning t New Orleans by March 20. By April 20, the committee hopes to secure funding to enable homeowners wh don't want to rebuild to be bought out. By May 20, Manning and Krolo will present the information gathere by the neighborhood planning team All committees of the BNOBC will make a final presentation on June 20, and the urban planning committee expects to complete a financial analysis, secure funding, and begin reconstruction by August 20.

Through its efforts, the buildin committee is "setting up a model for the next major community that suffers a catastrophic event," Krolo said. "More than half the country live in an area of geographic instability."
Angelle Bergeron

Congress approves $29 billion for Gulf rebuilding

On December 30, President Bush approved a bill that will send $29 billion in aid to the Gulf Coast, to help the region rebuild from recent hurricanes. The hurricane relief package was part of a defense appropriations measure, which the Senate passed on December 21 and the House passed on December 22.

For construction, the major element in the legislation was hurricane aid. It includes $11.5 billion in Community Development Block Grants, much of it expected to go to housing-related needs; $3 billion for the Corps of Engineers to rebuild levees in New Orleans (a breached levee in Plaquemines parish is pictured at left) and carry out other work in the region; $2.75 billion for the Federal Highway Administration, including money to rebuild area roads and bridges; and $1.4 billion to the Defense Department for repairs at Gulf Coast bases. The new relief plan is nearly twice as large as the $17 billion that President Bush had recommended, and it has a much heavier emphasis on infrastructure than on other other emergency funds. ***Tom Ichniowski***

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SPECIAL HURRICANE REPORT

World Monuments Fund helping to save two historic Gulf Coast homes

Two historic Gulf Coast homes damaged by Hurricane Katrina are receiving some much-needed help from the World Monuments Fund (WMF). The New York–based preservation group launched a restoration pilot program in December with $260,000 in start-up funding from American Express, the David Berg Foundation, and the Florence Gould Foundation. The two landmark residences, the Phillips House and the Hecker House, are located in Bay St. Louis, a small waterfront community 30 miles west of Biloxi, Mississippi.

The 1½-story antebellum-style Phillips House, built in 1840, has distinctive wood detailing, a raised central hall, and a broad gallery. The two-room Hecker House is a shotgun-type worker's cottage, which dates back to 1780. The homes are situated side-by-side along North Beach Boulevard, a historic district well known for its residential architecture in styles including Greek Revival, Queen Anne, and Colonial Revival.

The two houses sustained significant wind and flood damage and will require extensive repair and rebuilding. Their eventual resurrection is meant to call attention to the importance of preserving the area's heritage, and to show residents "alternatives to wholesale demolition," says Morris Hylton III, WMF's new project development manager.

A project timeline and budget have yet to be established. The Hecker has already been documented, disassembled, and stored to save the original timbers, siding, windows, and doors. Charles Hecker, its current owner, is planning to sell the building's lot. But he has donated its materials and remnants to the WMF, which is acting as project steward. The town of Bay St. Louis and the Hancock County Historic Society are seeking a new site.

The Phillips House, owned by local resident Dorothy Phillips, lost its wood siding, second story, and most of its front porch during Katrina. It will be documented and rebuilt at its current site with assistance from the Mississippi Heritage Trust and the Mississippi Department of Archives and Histor

Workers dismantling the Hecker House.

WMF is also developing a demonstration project for a 19th-century double-shotgun house in the Holy Cross neighborhood of Ne Orleans, which it expects to roll ou in early spring 2006. *Tony Illia*

Relaxed Casino siting rules prime Gulf building boom

The Hard Rock Casino in Biloxi, Mississippi, was badly damaged by Hurricane Katrina.

A casino construction boom is quietly gathering on the Mississippi Gulf Coast to take advantage of the state's post-Katrina relaxation of siting rules that had restricted coastal casinos to floating locations.

"I expect to see Las Vegas–style hotels," says Beverly Martin, executive director of the Mississippi Casino Operators Association. She says many new megastructures should emerge within the next five years, with some existing properties also planning to add 20,000 to 90,000 square feet of retail space. Even though most owners have not announced plans, Martin says they are already in contact with architects and engineers as they prepare to move ashore.

Mississippi Governor Haley Barbour signed a law on October 31, 2005, allowing casinos on the Gulf of Mexico to be built up to 800 feet inland. The move has already begun to impact the coast from Biloxi to Gulfport. The mayor of Biloxi has predicted that the city could have 15 to 20 casinos in the next three to five years, says spokesman Vincent Creel. The city, which already has nine casinos, expects to see an investment far greater than the $5 billion spent over the previous 13 years, he says. The move should also spark increased tourism as developers build more facilities to replace the casino barges and adjoined hotels, says Creel. The city sees private dollars as the key to recovery, and Creel says that proper infrastructure and utilities must be in place.

Landy's, owner of Las Vegas's Golden Nugget, has purchased 5.4 acres of land and is in talks with the mayor's office to move forward with its proposed $500 million resort and casino. The company is acquiring land from residents who lost homes or who would rather sell and relocate than rebuild, Martin says.

Harrah's Entertainment has committed to spending $1 billion for the construction of two casinos in Biloxi. They will be placed on either side of U.S. 90, the beachfront road that runs along much of the coast.

"Ultimately, all the casinos wil move on land for competitive reasons," says Rick Quinn, C.E.O. of Copa Casino in Gulfport. The Copa is primed to begin building an onshore casino reported to be valued at "several hundred million dollars," says Quinn. He says it is awaiting approval of the Mississipp State Port, which owns the land.

The Silver Slipper, in Bay St. Louis, which suffered a total loss after Katrina, also expects a fast turnaround. The casino was in the process of moving to Lakeshore, Mississippi, from Biloxi before Katrina. John Ferrucci, casino C.O.O says all plans were scrapped in fav of a land-based site. He says construction will begin December 15, and completion is scheduled for September 2006. "The key is to g the casino open and cash flowing," says Ferrucci. The Silver Slipper expects to complete its hotel element by September 2007 and the condominiums by September 200

E. Michael Powers

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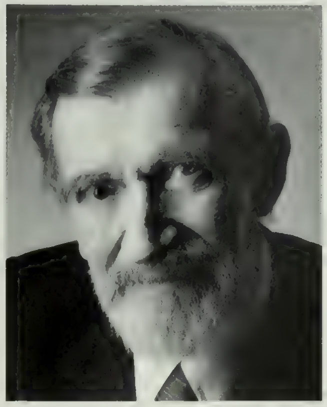
Architect James Ingo Freed, partner at Pei Cobb Freed, dies

James Ingo Freed, 75, architect of the Holocaust Memorial Museum in Washington, D.C., died December 15 at his home in Manhattan, after a decades-long battle with Parkinson's Disease.

Freed was a partner at Pei Cobb Freed, of New York City. Among his partners, I.M. Pei and Henry N. Cobb, Mr. Freed's signature was his ability to imbue contemporary materials—glass, steel, and stone—with a tactile authority.



James Ingo Freed.

Freed wrapped Manhattan's Jacob K. Javits Convention Center with a gridded membrane of reflective glass that dissolves the building's massive bulk, while conveying a dignified, monumental simplicity. He supported the building with a space-frame fretwork of rods and spherical socketed nodes that tested the technological limits of the construction industry when it was built in 1986. Its spectacular, light-filled lobby, echoing in contemporary terms London's 19th-century Crystal Palace, remains among Manhattan's most extraordinary interiors.

Freed struggled in the realization of the Holocaust Memorial Museum in Washington [RECORD, July 1993, page 58], worried that his building would either package the Final Solution too nicely or theatricalize it.

On visits to the death camps, he saw how the Nazis twisted the instruments of progressive industrial culture—medicine, law, engineering—to the manufacture of mass murder. Deeply affected, he created a skewed skylight, using metal details derived from what he'd seen so that the architecture itself could convey the enormity of the industrialized extermination of millions.

Born in Essen, Germany, in 1930, Freed had firsthand experience with the Nazi repression of Jews. He and his father rode streetcars through the night to escape the violence of Kristallnacht, "the night of broken glass." With his sister, he made his way to the U.S. via France and Switzerland in 1939. His parents arrived two years later on one of the last refugee ships.

In Chicago, Freed attended the Illinois Institute of Technology (IIT), directed at the time by Ludwig Mies van der Rohe. He would return to Chicago to head IIT's architecture program in the mid-1970s. He briefly worked in Mies's Manhattan office before joining Pei's young firm.

He came into his own with the Javits Center and the Holocaust Memorial Museum. He went on to add a luminous addition to the Los Angeles Convention Center (1993) He completed the 3.1-million-square-foot Ronald Reagan Buildi and International Trade Center, als in Washington, in 1998 [RECORD, July 1998, page 58]. Its Classical exterior contrasts with the exuberant, Modernist monumental dram of its internal atrium—a split personality attributable to years of political meddling that compromised what should have been a masterpiece. The spatial intricacie of the San Francisco Municipal Library (1996) are as much a resu of Freed's heroic effort to accommodate the city's myriad political constituencies as they are of his own architectural inclinations.

Freed won the opportunity in 1994 to design the National Air For Memorial. But a years-long controversy developed over the design's potential to overshadow the adjace Iwo Jima statue group. A new site was selected, Freed won a second competition, and construction has begun on the three stainless-steel spires that soar like contrails into the sky. *James S. Russell*

Donald J. Canty, former editor of *Architecture* magazine, dies

Donald J. Canty (right) , who died December 14 in Seattle, transformed the *AIA Journal* from a practice-oriented monthly into an acclaimed international design magazine. He renamed it *Architecture* in 1984, and edited it until the institute sold it to a commercial publisher in 1989. Had he been asked, he probably would have named *Architecture* his top professional accomplishment and passion.

Before joining the AIA in 1974, Canty founded *City*, a short-lived magazine championing urban life and the amelioration of poverty and social injustice. His zeal for racial equality spurred two volumes: *One Year Later* (1969), a response to the Kerner Commission Report on urban violence, and *A Single Society: Alternatives to Urban Apartheid* (also 1969). Canty, born in Oakland in 1929, started his career as an editor with *Western Architect and Engineer*, and then moved to New York City as a senior editor of *Architectural Forum* before launching *City*.

Architecture reflected Canty's broad interests. He broke ground with articles on energy conservation, adaptive reuse of old buildings, indoor air pollution, and with postoccupancy building evaluations. He created an annual review of new American architecture and devoted entire issues to cities of every description, works by previously unpublished architects, photographs by architects, and architects' drawings.

Canty was nonconforming, rebellious, ethical, humane, and possessed of a quicksilver mind and a mulish determination, as attested by publishers who tried to bring him and his magazine to heel, or by people who offered physical help. Disabled by childhood polio, he moved with difficulty on metal crutches.

He liked to say that one reason for *Architecture*'s success was that it was not a democracy. Once hired, however, staffers were fiercely defended and given plenty of rope. Canty also assembled a stable of talented contributing editors, including Pulitzer Prize winners Robert Campbell in Boston, and Allan Temko in San Francisco. In its insistence on editorial independence, innovation, and casting a broad net, Canty's *Architecture* was a father to today's ARCHITECTURAL RECORD. Indeed, RECORD's editor in chief, Robert Ivy, FAIA, who freelanced for *Architecture* throughout the 1980s, credits Canty as a mentor. *Andrea Oppenheimer Dean*

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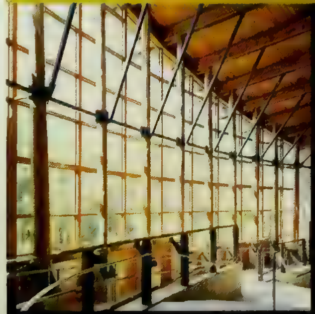

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IA sets ambitious agenda for building sustainability

y now the statistics are familiar: Buildings use nassive quantities of raw materials and consume iearly half of the energy and 70 percent of the lectricity used in the U.S. In late December, in a old step to reverse buildings' environmental npacts, the AIA's board of directors set a goal of lashing the fossil fuel consumption of buildings y 50 percent in four years. The goal includes dditional reductions of 10 percent every five ears. The AIA also expressed support for con- ensus-based standards for sustainable design.

The need to create a sustainability policy ecame clear from the growing body of research bout global warming and buildings' environmental mpacts, says R.K. Stewart, FAIA, 2007 incoming IA president. He adds that the policy also derives rom increasing requests among AIA members for nformation about designing green buildings.

To help develop the policy, the AIA hosted a ummit in Washington, D.C., in July, 2005, where esearchers presented sobering statistics about nvironmental degradation. Industry groups such as he U.S. Green Building Council (USGBC) and the reen Building Initiative (GBI) explained their green ating systems to AIA board members, the AIA ommittee on the Environment (COTE), and others.

Stewart admits that a 50 percent decrease in ossil fuel use in four years is "an aggressive target." But experts say it is possible. "You can achieve a 50 percent reduction with existing building technology at no extra cost, by simply using the right design strategies," such as daylighting and passive heating and cooling techniques, says Ed Mazria, who has spent his career analyzing building energy consumption. (See Mazria interview, page 142.)

While careful to avoid endorsing any particular green-building rating system, the AIA says such systems should be consensus-based, with design and performance (energy savings) data verified by independent third parties.

Stewart acknowledges that AIA's statements are for now short on specifics. A sustainability task force will be formed in early 2006 to help the AIA implement its goals in practice and education, he says, and the board advised the AIA to hire a staff architect to further pursue the green agenda. Vivian Loftness, FAIA, 2005 chair of COTE, adds that architects also need to consider issues such as land use, transportation planning, and infrastructure.

According to Mazria, greener building design and construction could have a greater effect on reversing global warming than change in any other industry. "What the AIA has done is nothing short of monumental," says Mazria. "But now the real work begins." *Deborah Snoonian, P.E.*

MoMA's architecture chief leaving for Miami Art Museum

Terence Riley, who has been the Museum of Modern Art's chief curator of architecture and design for the past 14 years, announced in early November that he would leave in early March. And, on January 4, he revealed that he would become director of the Miami Art Museum, effective March 15.

"I never intended to stay at MoMA as long as I did," says Riley, who began his career as an architect. He adds that construction of the institution's new addition, designed by Yoshio Taniguchi, kept him on board at the end of his tenure. "After we finished construction, I started thinking about doing other things." Riley led several major shows at MoMA, including recent exhibitions about landscape architecture's emergence (*Groundswell*) and about contemporary Spanish Architecture (*New Architecture in Spain*). He also helped install the architecture department in the new building. Among his proudest achievements, Riley points to the highly popular Mies van der Rohe show, *Mies in Berlin*, which was held in 2001. He says it officially marked Modernism's return to public favor after years of derision.

Riley says he had no intention of taking a new job right away, but couldn't turn down the Miami position, which will allow him to play a significant role in another building project. After securing a major bond measure, the museum is about to build a new, 125,000-square-foot home in the city's Bicentennial Park. Its current museum, in Downtown Miami, measures only 30,000 square feet. No architect has been selected for the project yet, but Riley says he hopes one will be announced in six to 12 months.

Another major challenge, he says, will be convincing Miami's major art holders to donate funds and artworks to the museum, which will have much more space for acquisitions. Riley is already a part-time resident of Miami, having recently built a second home there. He will replace Suzanne Delehanty, who stepped down on December 31. *S.L.*

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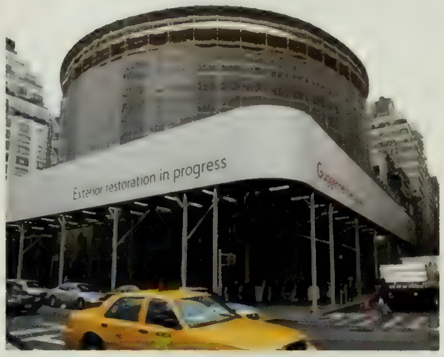


Guggenheim spruces up restoration with custom bridge

The low-hanging, blue-painted plywood pedestrian bridges that accompany construction projects and building renovations in New York are one of the banes of the city's streetscape. The structures often obscure entrances, create the illusion that businesses beneath them are closed, and cast ominous shadows onto passageways.

To help avoid such a situation, when Guggenheim Museum officials recently embarked on a complicated restoration of their famous Frank Lloyd Wright building, they had their pedestrian bridge custom-designed. The typical bridge comes in two code-mandated heights, either 8 feet or 16 feet above the sidewalk. The Guggenheim's pedestrian bridge looms 20 feet above, so the building's entrance is not obscured. The supports for the bridge are cut from I-beams, instead of the usual modular pipes, and don't require wooden shims or meta cross braces. And instead of being painted the typical blue, the 12-foot-high plywood fascia of the Guggenheim's pedestrian bridge actually serves as a slick billboard. A red vinyl graphic of the museum's name is applied onto panels that are a light beige color. "When people come to see the building, they are coming for the aesthetic experience, so it would have been discordant if the first thing they saw was ugly scaffolding," says Guggenheim spokesman Anthony Calnek.

The restoration of the Guggenheim (by a team headed by preservation architect Wank Adams Slavin Associates) is being performed to fix cracking in its concrete structure, which has occurred because it was constructed without expansion joints. The Guggenheim was one of the first buildings to use an acrylic-based paint on its exterior when it was built in 1959. According to Calnek, "It was mistakenly thought that the paint would act as a 'cocoon' around the concrete—that it would expand and contrac along with the building, and that would compensate for the lack of expansion joints."

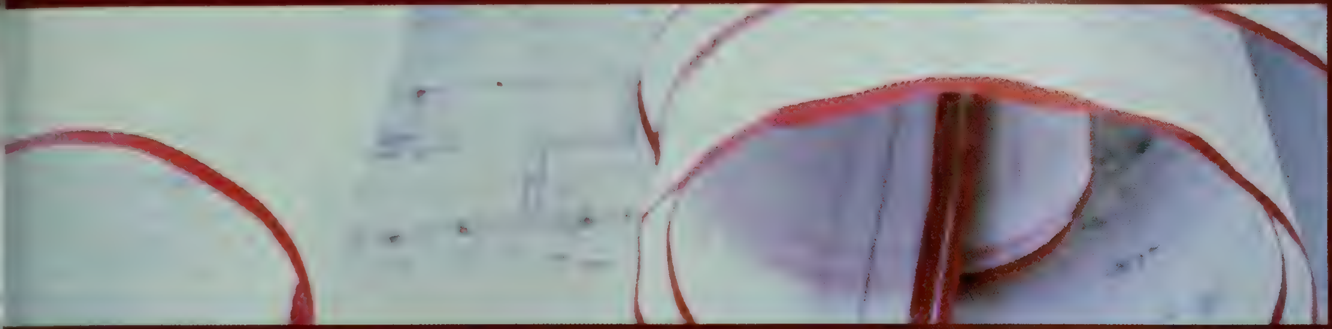
The building's exterior has now been stripped of its white paint, and its bare Gunite walls are visible for the first time since it was built. The project is still in a diagnostic phase. The actual restoration work, which involves plugging the cracks, is expected to begin this summer and will last about a year. *Alex Ulam*

New York Public Library restores another beautiful space

The regilded ceiling draws attention.

A steady stream of visitors has been transfixed by the restored Beaux-Arts ceiling in the New York Public Library's Lionel Pincus and Princess Firyal Map Division. Carrère and Hastings designed the two rooms and the mezzanine that comprise the 7,000-square-foot space in 1911. The area was closed for nine months while New York firm Davis Brody Bond completed the $5 million renovation, and reopened on December 15. The firm completed the library's last major renovation, to its main reading room, in 1998.

Project architect Julia Doern focused on restoring finishes in the Map Division's reading room, which had been browned and dulled by pollution. The original 20-foot-hig ceiling's extraordinary decorations included Dutch metal, an inexpensive finish sometimes substituted for gold leaf. The firm relied on the "artistry," says Doern, of contractors to apply polychrome designs with red and green paint, befitting the original room. The ceiling was regilded and repainted based on the original ornamental work. The renovation also involved designing a new, larger reference desk, removing World War II–era black-out paint from windows, and restoring the red quarry floor tiles which had originally been imported from Wales. *Sarah Cox*



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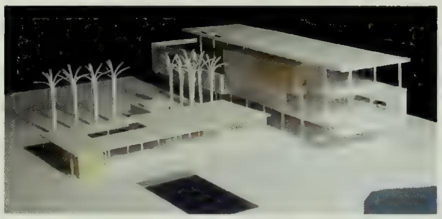
Garnier's Monte Carlo Opera completes renovation

Two years after closing for a renovation by French architects Alain-Charles Perrot and Rainier Boisson, Charles Garnier's Beaux-Arts-style Monte Carlo Opera House reopened last month. Inaugurated in 1879, it was completed four years after Garnier's Paris Opera House.

The Opera's majestic auditorium.

The $32 million restoration included an overhaul of the roof, the stage, the orchestra pit, and the replacement of backstage mechanical equipment, as well as structural work on the foundations. Beneath the auditorium, 106,000 cubic feet of rock were excavated to create additional space for artists' dressing rooms and a new air-conditioning system. In the main auditorium, which took Garnier only eight months to build, 522 Mohair-covered seats, gold-leaf decor, and a 16-foot-high chandelier all underwent restoration work.

Financed by local government and the building's owner, the Société des Bains de Mer, the complex project required the installation of up-to-date equipment while "faithfully restoring the roofing, facades, and the interior decoration," says projec director Alain Desmarchelier. *Robert Such*



Rudolph's Revere House adds addition to help save original

Revere House, built in Sarasota, Florida, in 1948 by architect Ralph Twitchell and his then-assistant Paul Rudolph, has begun restoration by local architect Guy Peterson. The property will now include a freestanding, 4,800-square-foot addition (at right in photo, left), in order to bring the water front property value up-to-date.

The original house was one of eight prototypes commissioned by the Revere Quality Institute to demonstrate industrial materials' appeal in private residences. Peterson's goal is t restore the original house (which will serve as a cabana for the property's new pool) via its origina working drawings, and to keep the new house true to the original's vocabulary. Both buildings w use the same materials: steel, glass, structural concrete, plywood—and similar shapes: horizonta planes, cubes, and slabs. Peterson's strategy is to keep the living spaces open so the new hous doesn't overpower the original. The project is se to be finished in July. *Dianna Dilworth*

Modern movement for Neutra House

A simple shack behind a bamboo thicket in Los Altos, California, turned out to be one of the most significant examples of Richard Neutra's residential work outside of Southern California. The building was recently moved to save it from demolition.

The 980-square-foot house was originally part of a composition of three small, redwood-clad cottages located in an orchard near Stanford University. Neutra designed them between 1935 and 1939. By 2000, the escalation of real estate prices meant the land was far more valuable than the building, so local designer Miltiades Mandros, Assoc. AIA, working with the house's owner, John Gusto, organized a campaign to relocate it.

The owner of the house donated it to the Los Altos Community Foundation, and Los Altos politicians approved moving the house to city-owned land in late 2005. The community has raised two thirds of the funds to move and restore it. On November 20, it was lifted off its foundation, sawed in half, and moved to a nearby orchardlike setting. Local archi tect Mark Sandoval, AIA, will help put the pieces back together. The restored house will serve as a meeting space for the Los Altos Community Foundation, other organizations, and perhaps as a local architectural museum. *Kenneth Caldwell*

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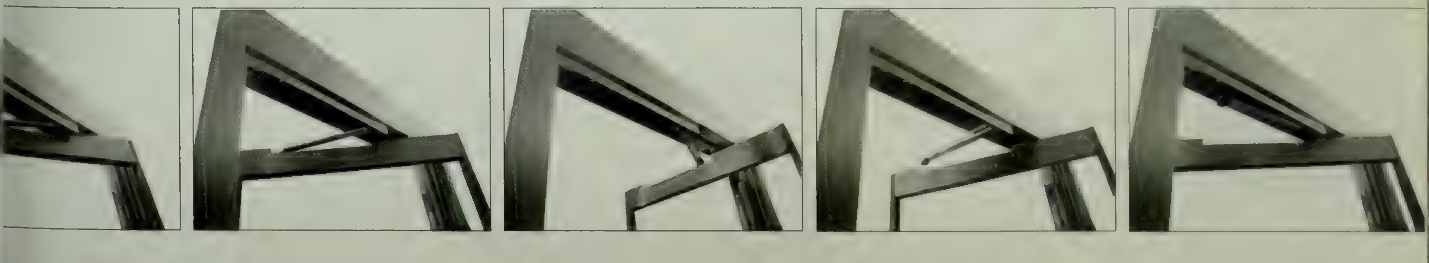

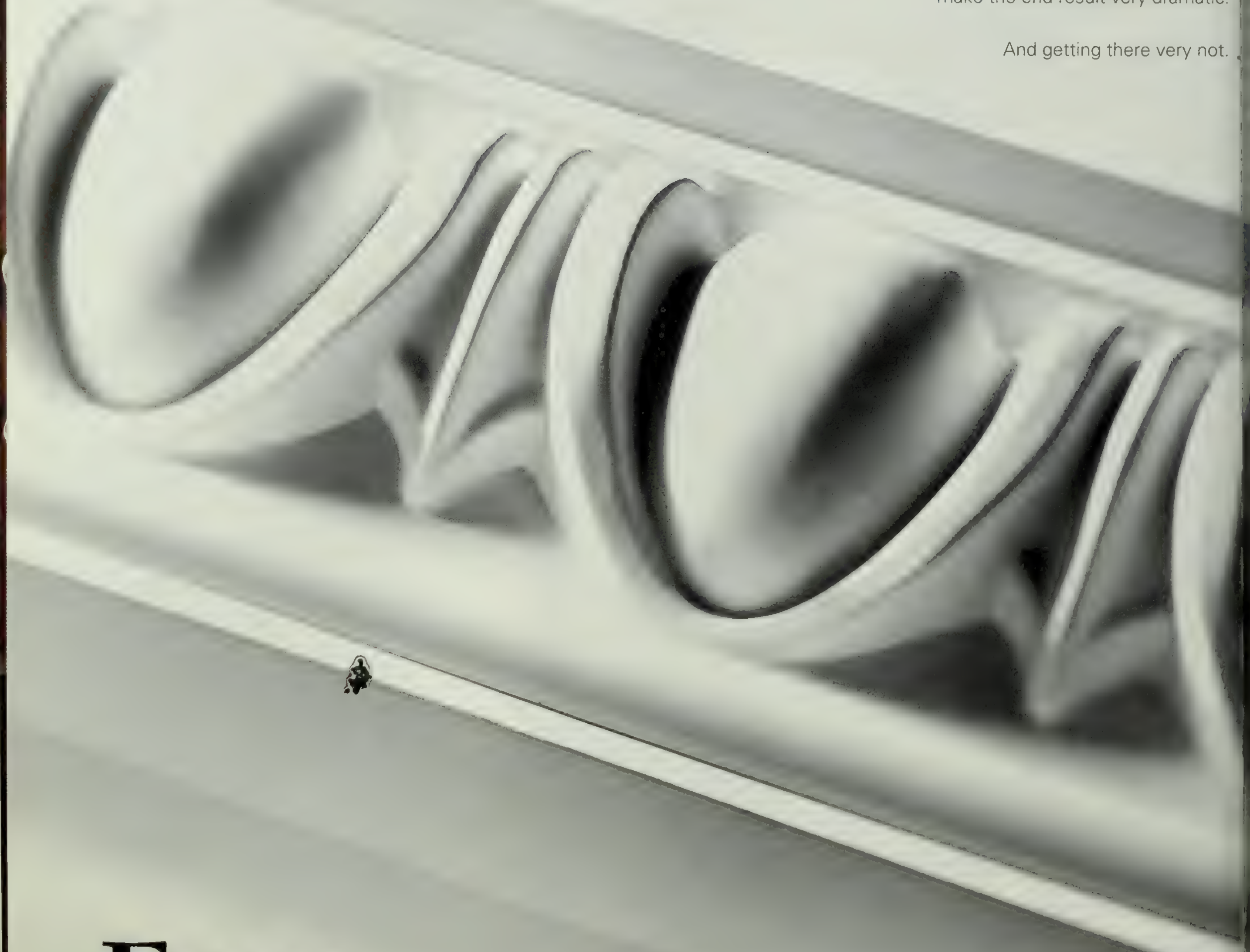

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News Briefs

A creates new post to help ief architect The U.S. General vices Administration (GSA), ich is still searching for a new ef architect to replace Ed Feiner, A, who left roughly a year ago, created a new position to help chief architect manage con- uction issues.

The new position of Assistant mmissioner for Capital nstruction Program Management s posted on December 9. cording to the GSA posting ww.gsa.gov), the job will entail ing advice on all policy matters ncerning the management of the blic Building Service's capital sign and construction program. position is vital, says GSA com- ssioner of public buildings David nstead, because of the huge mber of GSA construction proj- s. "Everyone is struggling with terial cost increases and trying to find ways to deliver these projects on budget," he says. As of December, the GSA had about 200 projects under way, at a cost of about $11 billion. Sixty-four are new construction, and 112 are renovation projects.

GSA's new U.S. Courthouse in Seattle.

Feiner left the position of chief architect just under a year ago, after serving since 1996. He was highly influential in establishing the GSA's Design Excellence Program, started in 1993. He later headed the program, which helped streamline and improve the architectural selection process for federal buildings. GSA employee Les Shepherd, who was deputy chief architect from 1998 to 2002 and director of federal buildings from 2002 to 2005, has been filling in as chief architect since last February. The GSA posted a call for a new chief architect in April 2005, but closed it at the end of May, citing, says Winstead, a lack of qualified candidates. The GSA reposted the position in December, and is now recruiting more aggressively. *S.L.*

Japanese architect falsified earthquake data Japanese Architect Hidetsugu Aneha recently admitted to falsifying building-earthquake-resistance data on several projects in order to save money and win contracts, causing a national scandal in Japan.

Aneha runs a small firm in Ichikawa that has played a role in nearly 200 structures, including high-rise residential towers, hotels, and temples. On November 17, he confessed to designing 21 buildings in recent years that would not withstand a moderate earthquake.

Japan is located atop four tectonic plates, making it especially prone to earthquakes. Because of the risk, the country is known for its exceptionally strict codes.

Aneha, under pressure from developers, apparently used less structural steel than required, to reduce construction costs. His admission prompted several hotels to close. Condominium owners have fled their homes, while construction has stopped on other Aneha-related projects. By mid-December, officials had identified 57 buildings with deliberately underdesigned seismic resistance—all with fraudulent documentation—and had ordered most to be demolished. The local police are conducting an investigation into possible criminal behavior. *T.I.*

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Holl designing Denver courthouse Steven Holl Architects, in collaboration with Denver-based firm klipp Architecture, has been selected as leading designer for a new downtown courthouse in Denver. The project will be the centerpiece of the city's downtown Justice Center, which will include the courthouse, a new post office, a new detention center, and a renovated county jail. The courthouse project is expected to break ground in spring 2007.

Holl was chosen for the $99 million, $335,000-square-foot District Courthouse over a short list that included Robert A.M. Stern, Foster and Partners, and Richard Meier & Partner. Designs are expected by April.

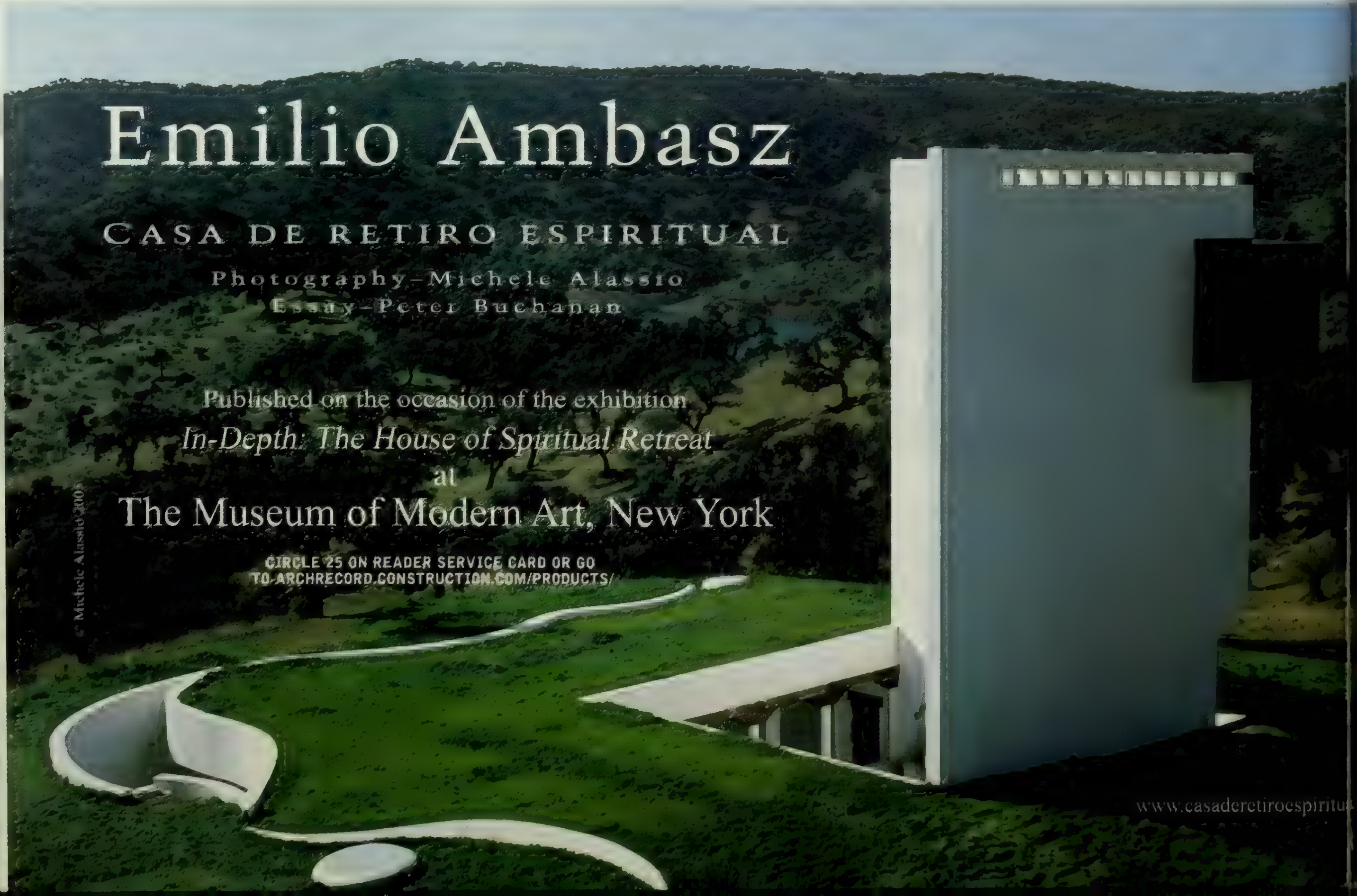
The Justice Center will be located in the corner of Denver's city government complex, called "Civic Center"—a large public park rimmed with government buildings and cultural institutions that serves as the heart of the city—on the western edge of downtown. The 430,000-square-foot, $114 million detention facility will be designed by Washington, D.C.–based Hartman-Cox Architects. *Cynthia Kemper*

James Tittle.

Tittle taking Kemper After spending almost five decades in a variety of state, regional, and national roles for the American Institute of Architects, James D. Tittle will receive the Edward C. Kemper Award for individual service to the AIA. Tittle founded Tittle Luther Partnership in Abilene, Texas, in 1957. He served as president of the Abilene Chapter of the AIA in 1973, and president of the Texas Society of Architects in 1993. His national positions have included a seat on the AIA board of directors, regional director for NCARB, membership in the American Architectural Foundation Board of Regents, and a series of appointments in the AIA College of Fellows. In Texas, he cofounded the Abilene Cultural Affairs Council and the Texas Cultural Trust as chair of the Texas Commission on the Arts in the 1990s. He now chairs the Abilene Cultural Affairs Council and Young Audiences, an arts-education program. *David Sokol*

Theodore Landsmark.

Landsmark wins Whitney Young The AIA has announced that it will honor Theodore Landsmark with its 2006 Whitney M. Young, Jr. Award, honoring socia responsibility in the profession. Landsmark has been president an C.E.O. of the Boston Architectural Center since 1997. Currently, he is establishing the Robert Houseman and the Richard Kirkham Fund for Diverse High School Students Entering the Design Professions. As cha of the AIA Diversity Committee since 2002, Landsmark oversaw development of the Demographic Diversity Audit that was submitted at the AIA's December board meeting. He is also president-elect of the Association of Collegiate Schools of Architecture, for which two maj objectives are "to significantly improve communication among faculty, and … to address serious the issue of lack of diversity in our faculty and student bodies." *David Sokol*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For and about the emerging architect

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spiration abounds this month, beginning with Design, featuring San Francisco Bay Area architect om Faulders, whose work is influenced by everything from kitchen sponges to electronics and hletic-shoe design. The theme continues in Work, with two of 2005's winning designs from the S. Department of Energy's Solar Decathlon, a competition as worthwhile as it is stimulating. Visit esign, Work, Live, and Talk at archrecord.com/archrecord2/ for more inspired new design.

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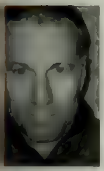
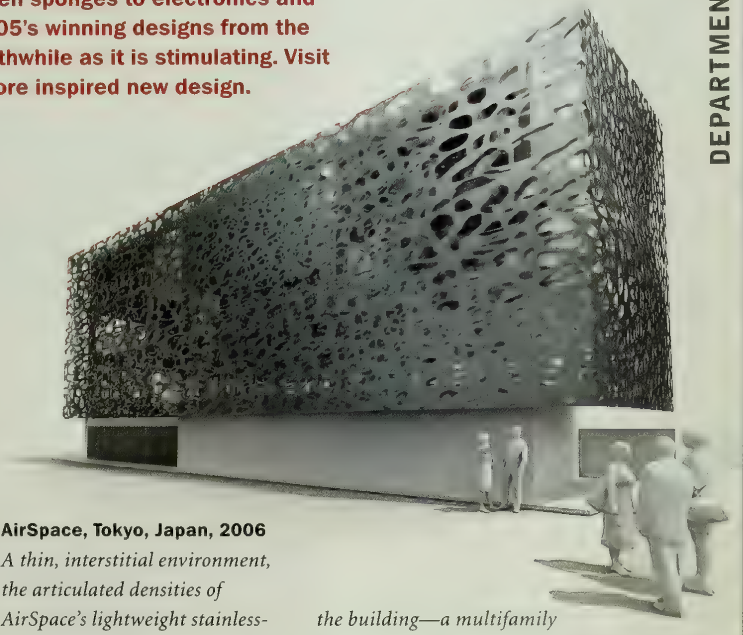
om Faulders: Finding depth in surfaces



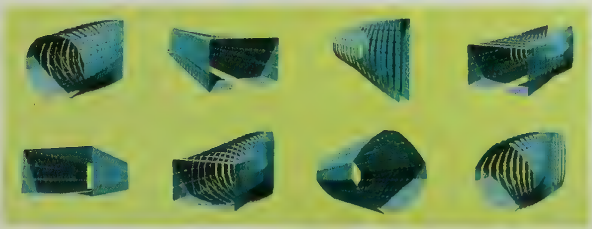
Thom Faulders appreciates contradictions, and his work exemplifies his ability to embrace the many sides of architecture—the conceptual and the built, the artistic and the practical, the fixed structure and the perceived space. One of his current projects, a thin, foliagelike, stainless-steel skin for AirSpace, a multifamily housing unit in Tokyo, demonstrates his ideas about the beauty contrasts. “Surfaces can be a real opportunity,” he says, “and for AirSpace, I as inspired by foam, or a sponge. As an exterior membrane for a building, the htweight steel becomes a zone where artificial meets nature. It protects the cupants from the roadway while at the same time providing a fluid environent that changes when sunlight and weather interact with it.”

Faulders says he really found his way to architecture by studying it, leav-g it and becoming an artist, then returning and starting a company called eige Design; he's currently rebranding the company, but says he chose the ame because his anything-but-bland designs contradict its neutrality. oking for the differences in things, the contrasts, and elements about struc-res that continue to change is what most interests him about architecture. Ve're hardwired to recognize difference,” he says, nd although there has to be some constant medium contrast it to, finding that difference, designing it, is n.” As an installation artist, Faulders says his work as so heavily concept-based that he found he was oring himself and feeling isolated. Getting back to the neatspace”—a term coined by hackers and techno eeks to refer to the real space we live in, as opposed cyberspace—helped him find an outlet for concepts that had some practical ses, too. “My work still has strong concept-based and academic underpinings,” says Faulders, “but now it exists in ‘solid space.’ ” Another contradiction? es, but I'm always looking for a dynamic way to express myself.”

In seeking to express and create dynamic designs, Faulders says he finds spiration outside of architecture, in industries such as electronics, aeronautics, nd athletic gear. The iPod in particular has inspired him lately. “It's not just an rtifact,” he says. “It's flexible, customizable, and practical.”



AirSpace, Tokyo, Japan, 2006
A thin, interstitial environment, the articulated densities of AirSpace's lightweight stainless-steel meshwork are layered in response to the inner workings of the building—a multifamily housing unit. Views are shielded behind the skin's foliagelike cover.



***Particle Reflex*, SFMOMA, San Francisco, 2001**
Part of the SFMOMA Experimental Design Awards exhibition, Particle Reflex, *made of acrylic panels, was tethered in the air with bungee cords, allowing for unpredictable connective patterns to emerge.*

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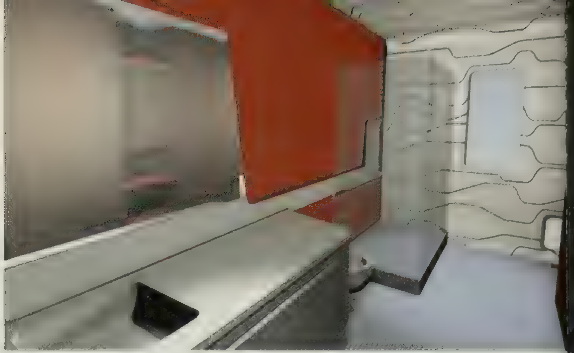
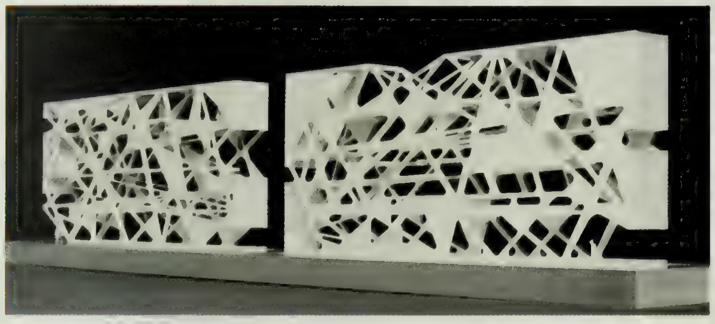
Claiming to be neither a geek nor a romantic when it comes to design, Faulders says he appreciates innovators, particularly the fresh visions of students. He currently teaches at the California College of the Arts, in San Francisco and Oakland. "I enjoy thinkers who keep pushing the envelope," he says. "Students do that." His own projects attempt that push, including installations such as *Particle Reflex*, his 2001 San Francisco Museum of Modern Art piece that used plastic panels held in midair by bungee cords to form a giant volume, at once structured and yet changeable due to environmental stimuli. Whether in plastic, steel, or concrete, Faulder's work is always seeking mutation. "I see materials as verbs," he says, "whether they have inherent, verblike qualities or become dynamic as I work with them." Faulders doesn't see architecture as everlasting. "Forces change buildings in time," he says. "Everything changes. That's what's interesting." *Ingrid Spencer*

For more photos and projects by Thom Faulders, go to archrecord.com/archrecord2/.



Deform House/Private Gallery, San Francisco, 2006

This gallery addition is centered o a ceiling and rear wall lining that uses virtual tactics that appear to "react" to a person's presence in th space. Depending on an occupant position, the randomly spaced grooves visually bunch, bulge, and align in indeterminate formations



Chromogenic Dwelling, unbuilt

A competition proposal for multifamily housing in San Francisco, the Chromogenic Dwelling solves contextual massing issues by deploying a real-time electronic window system that continually changes its pattern according to the building's daily occupancy load and individuals' needs for adjusting light and privacy.

Work

Solar Decathlon winners bring on the sun

Designed by students at Cornell University (left) and the University of Colorado (above), these solar-powere mobile homes placed second and first, respectively, in the U.S. Department of Energy's 2005 Solar Decathlon

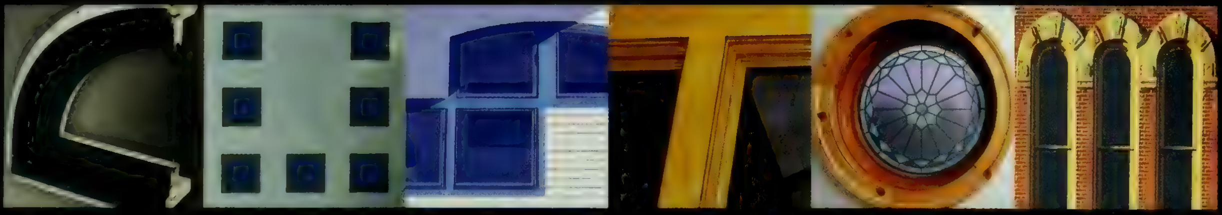
Ben Uyeda is fighting a culture war. But it's not about guns, gays, or abortion—it's about solar power. Uyeda is the chief architecture officer for an ecofriendly developer called Independence Energy Homes. The technical problems in using photovoltaic cells to power houses were solved long ago, he observes, but the hard part is altering consumers' perceptions. "You can put 'bio' or 'eco' in front of anything and people won't care unless you communicate how it makes their lives better," says the 27-year-old Uyeda.

To demonstrate value, Independence will partner with developer Growth Corridor to build 70 homes in the Berkshire Mountains of Massachusetts later this year. They hope to convince buyers that photovoltaic cells are a capital expense that can be part of a mortgage and thus yield a fixed cost for energy. It's a persuasive argument, given the skyrocketing prices of conventional energy sources such as oil and electricity.

Uyeda, who received his master's in architecture from Cornell University in 2005, founded Independence with four other Cornell grads while they were competing in the U.S. Department of Energy's Solar Decathlon. Held semiannually in Washington, D.C., the event challenges student teams to design and build solar-powered houses. Richard King, the Decathlon's founder and director, says judges mainly look for curb appeal. "One of the barriers to solar power is that people think it's ugly," King explains. "That's why we're looking for photovoltaic systems integrated right into a house, rather than just stuck on as an afterthought or retrofit."

Cornell's house placed second in the 2005 Decathlon, surpassed only by the University of Colorado's entry. The Colorado team also hopes to take its design to a larger audience and is now working with the Genesis subsidiary of Champion Homes. Colorado's design innovates in more ways than just its architecture. The team invented "Bio-SIPs," structural insulated panels composed of soy-based insulation and SonoBoard, a lightweight composite paneling made o recycled paper and wood. Julee Herdt, an associate professor of architecture at the University of Colorado, cocreated SonoBoard in the 1990s. Although the product's manufacturer recently discontinued it, Herdt and the U.S. Department of Agriculture's Forest Products Laboratory are developing a newer version with an eye to commercial application in SIPs. Herdt hopes it will be ready for the next Decathlon in 2007. *James Murdock*

For more information on the Solar Decathlon and the University of Colorado and Cornell University's winning houses, go to archrecord.com/archrecord2/.



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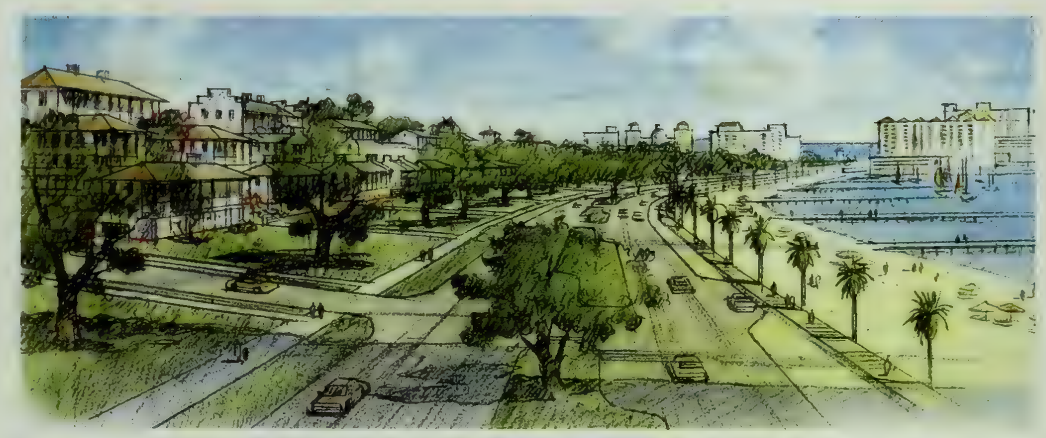
Will new plans for the Gulf drown it again, this time in nostalgia?

Critique

By Michael Sorkin

e recent report by the Congress the New Urbanism (CNU) on the onstruction of the Mississippi Gulf ast is impressive for the speed of execution, its voluminousness, d its sound recommendations transport infrastructure, neighrhood consolidation, and the 11 wns it examines. But, like so much U product, these useful ideas are ighted by a concrete kimono, an erwhelming fixation on *architec*- *re*, a unitary fantasy of perfection at seeks to prescribe the precise aracter of every stick and stone in e state. Grafted to the collection of wn plans (and promulgated in an companying "pattern book" being stributed in the tens of thousands local Wal-Marts) are reams of odel architectural and planning de, generic CNU boilerplate speci- ng correct forms of architectural havior, including styles, setbacks, ndow types, plantings for the nt yard, color schemes, gazebos, cket fences, ad nauseam.

The disproportionate promince of prescription renders spect much of the appropriately etchy planning suggestions by plying a necessary connection tween the logic of light-rail or ntered neighborhoods and an chitectural uniformity designed to nder every shotgun house, corner ore, and casino stylistically the me. This relentless specification purely formal: almost completely sent from these "smart" codes is any real attention to the issues of natural systems so crucial in the wake of a disaster whose effects were founded in willful environmental ignorance. While the report groans with morphological instructions, it is virtually mute on mitigation strategies for the inevitable future storms and floods, and offers next to nothing about energy, cooling, materials, waste management, durable structures, wetlands restoration, barrier island protection, or flood-zone policy. To be sure, there is a brief laundry list of environmental proposals (generally no more than a sentence or two each) attached to the "regional framework" plan (build *one* certified green building in each town, promote energy efficiency, start recycling, use rubble for fill, etc.), but the weight of the CNU's interest is clear. Lip-service to environmental and social issues smothered in piles of maniacal detail on traditional acts as a nudge and wink to the people who pay the group's bills. What a pity that so much good effort is rendered ridiculous by being immunized against interpretation, by the dogmatic insistence that intelligent urbanism must always be subservient to the stylistic peccadilloes of a single imagination and its uptight tastes.



The New Urbanists and designers working with them envision a new waterfront boulevard for Biloxi, Mississippi.

Because of this narrow fixation, the CNU project has become increasingly undemocratic in both style and content, advocating a way of building that is constantly defended as the people's choice—as if any such unitary version of "the people" exists in our marvelously diverse country—but posed in a way that offers only the most superficial and exclusionary options. As with environmental questions, the CNU report offers a dozen vague recommendations for "social issues" (planning should accommodate diversity, low-income housing should "look good," there should be rental and for-sale housing, only the private sector can produce what we need, etc.), but even these are ghettoized in their own separate—and easily ignored—report. Bromides to the contrary notwithstanding, the CNU—in its actual practice—has become the corporate advocate for monochrome, strictly residential, single-class, automobile-based, visually homogeneous towns and suburbs that increasingly camouflage with hypocritical piety the larger failures of policy—economic, social, and environmental—that they are allegedly designed to redress. By serving as the *architectes du roi* for Haley Barbour and his clique (a marriage brokered by Mississippi real estate developer Leland Speed), the CNU functions as a fig leaf and advocate for the Big Business programs and policies—including massive casino construction, upscaling of coastal development, environmental negligence, repression of diversity, dictatorial planning, the exile of the

ontibuting editor Michael Sorkin the director of the urban design ogram at City College of New York.

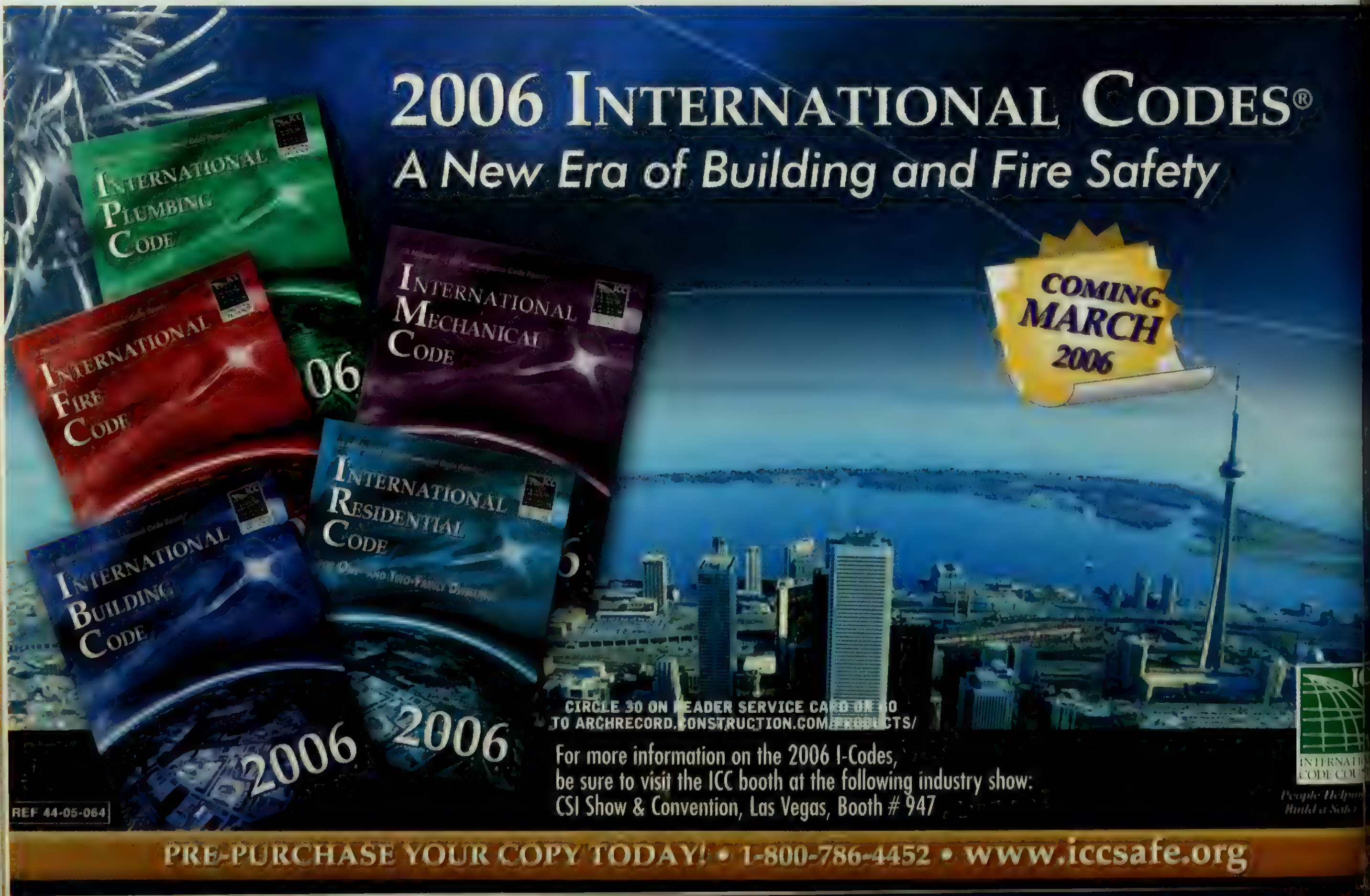
poor, and Disneyland culture—that their sanctimonious official line allegedly opposes. CNU pattern books have nothing to say about the rigid patterns of segregation that their smiley-face architecture so blithely reinforces.

By coincidence, I happened to be in Biloxi during the CNU charrette that helped guide the development of the group's plans for the Gulf, and I found it both impressive and horrifying. The CNU is nothing if not well organized and was able to summon more than 100 of its members from around the country to brainstorm in Biloxi. They arrived, took a bus tour, and got down to work, organized by the leadership into teams (each under the supervision of a trusted apparatchik) that dealt with individual towns and with common issues, including regional development, transportation, and architecture. Outside participation appeared limited to a small number of politicians and business types, well-intentioned and dedicated local architects standing in for actual grass-roots groups or "inexpert" local citizens and organizations. Of course, the media were there in droves, and Andres Duany circulated majestically among the teams, accompanied by a film crew to record his every pearl.

The charrette, an important and effective planning instrument, is an excellent medium for rapidly getting a large number of ideas on the table and for testing them by looking for the synergies and compromises that help professionals understand and incorporate the needs and desires of those they seek to serve. CNU charrettes, on the other hand, seem to be media for the recirculation and validation of ideas that are already decided, for telling people what's best for them. It is clearly not possible for a CNU charrette to produce a plan that is not based on Traditional Neighborhood Development, on old-timey architecture, on the whole range of self-evident and uniform truths that they seek to instigate with minimal inflection everywhere. Thus, the town teams find the sites for the Celebration-style "neighborhoods," while the architecture teams add stock schtick from headquarters to flesh them out. The outcome of these charrettes is never in doubt.

The CNU report includes renderings of typical neighborhoods and streets.

Something very similar appears to be happening in New Orleans. Planning initiative there has been placed in the hands of the Bring Back New Orleans Commission, which has just released its report. The commission is a mayorally appointed, big-business dominated group whose leade and most influential member is Joe Canizaro, a real estate developer and major Bush fund-raiser, who heads the commission's planning committee. Canizaro, a past president of the Urban Land Institute who has been called, among other things, the Donald Trump of New



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Orleans, is notorious for his 1990s role in fomenting the demolition of a large public housing project adjoining a 70-acre parcel he was seeking to develop.

Soon after its formation, the Bring Back New Orleans Commission turned, mirabile dictu, to the ULI to formulate a plan for the city as a whole. This was duly completed in late November to gales of protest. That plan, which has effectively framed debate since its release, was predicated on triage, the idea that certain parts of the city must be abandoned as too expensive to save. This structured disinvestment strategy—the inevitable *realpolitik* of the invincible bottom line—is nothing less than the return of 1970s-style "planned shrinkage" so vehemently denounced then as code for an assault on the poor. It's no surprise that the places the ULI proposes to abandon are disproportionately the homes of low-income African-Americans.

The commission's own plan (like Mississippi's or Ground Zero's) simply amplifies the ULI recommendations, reflecting, as well, the position of the Louisiana Recovery Authority (which has recently hired the CNU as its planning consultants), the RAND Corporation, and other groups that insist that New Orleans must contract by as much as 40 to 50 percent of its pre-Katrina population. Although the commission plan suggests that citizens be "allowed" to rebuild anywhere in the city, it simultaneously undermines the possibility. Not simply does it suspend permitting for another four months—frustrating individual rebuilding—but it gives destroyed neighborhoods only a year to get it together and reach a unspecified threshold of viability o their own. The intended effect is clear. By offering little or no public assistance for the effort and suggesting that if people are not able find the wherewithal to reconstruc by the deadline, their neighborhoo will simply be bulldozed, the plan continues Katrina's assault. In Canizaro's words, "If a neighborhoo is not developing adequately to su port the services it needs to suppo it, we'll try to shrink it." It is clear which neighborhoods he is referrin to. In the words of ex-Mayor Marc Morial, who is the current presiden of the National Urban League, the commission has offered a "massive red-lining plan wrapped around a giant land grab."

What, one wonders, is the position of the CNU on this matter? To be sure, it will want any reconstruction to follow its conformist architectural taste and will praise the new light rail. But what about the real issues, those of justice,

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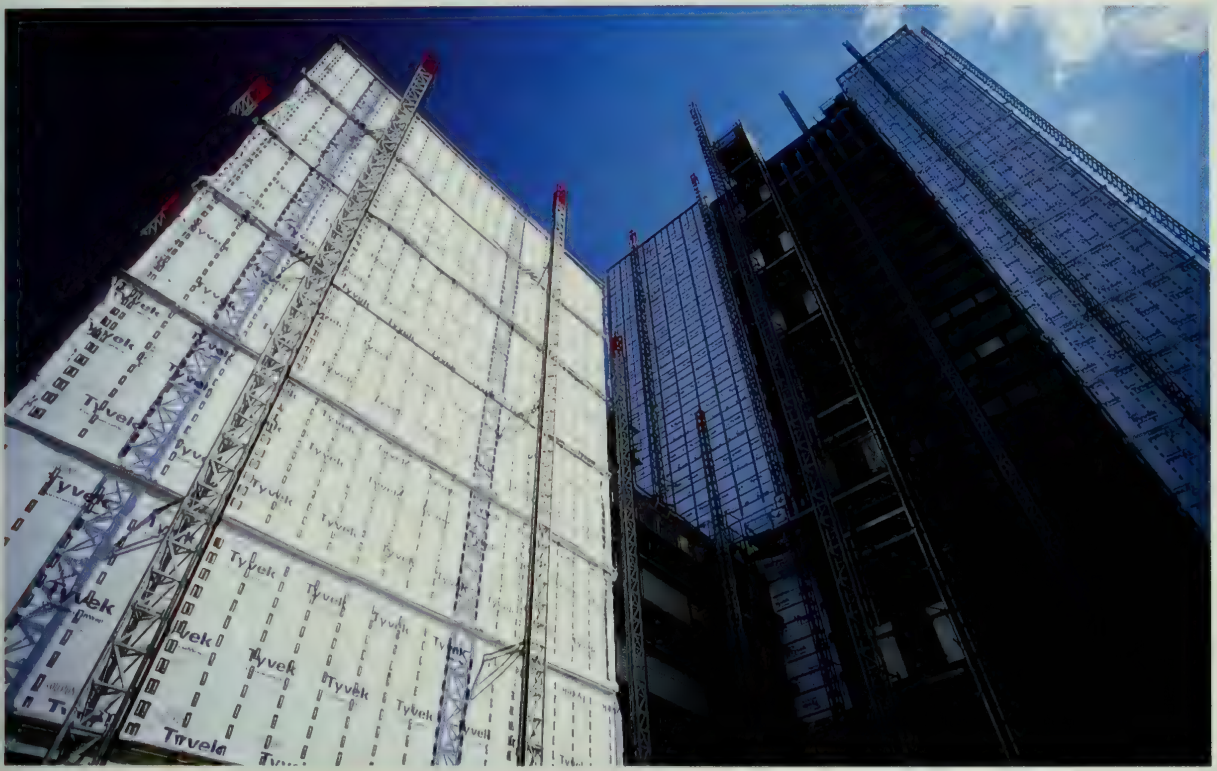

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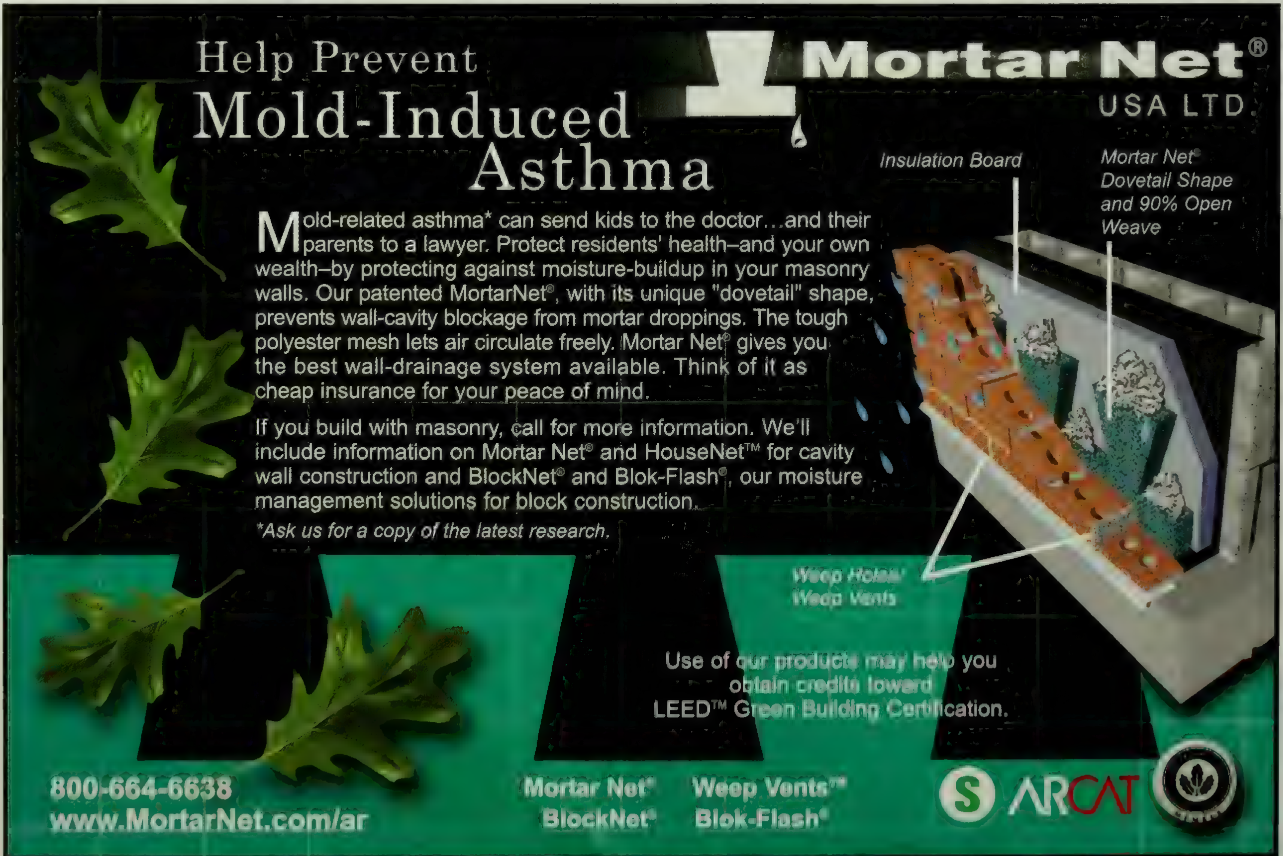
equity, responsible environmental stewardship, and diversity? With the volumes of publicity the group has been receiving (not least in this magazine), where are the ringing calls for state and national policies that are fair and sustainable? Where are the demands for citizen empowerment? Or the protests against the Catch-22 of "allowing" people to return and simultaneously making it impossible for them to collect insurance, get financing, or receive public services? Where is the heart? Where are the stirring words of the great Charter? I am not the first to observe that the CNU—as an ideological and organizational construct—is remarkably (and deliberately) similar to the Modernism it so acerbically criticizes for cruel formalist monomania and self-important manifestoes. Like the Congres Internationaux d'Architecture Moderne (CIAM), the CNU entered the world calling for spatial reform as an instrument for creating a better society, espousing principles both admirable and succinct. And like CIAM, the CNU is adamant in insisting that these goals can only be accomplished by the universal application of the right style of architecture, prescribed down to the clapboards and mullions.

The issue with such prescriptions is not the superiority of one uniformity over another, it's the uniformity itself. Modernism, informed by a dreamy utopian socialist ideology, was grounded in the idea of producing a universal subject—"a new man"—and in architecture's potential to help mold these reborn citizens, happy workers in identical flats set in a sunny, salubrious landscape. But that god failed when it became totalitarian, when equality was transmuted into identicality. The New Urbanists' ideal subject may be a happy consumer committed to traditional family values but the fallacy is the same: the idea that architecture is not to be designed for people in all their messy, squalling, and delightful difference but as a means of assuring that they converge into behavioral sameness. Instead of towers in a park, CNU citizens will happily inhabit their dryvit Taras, rocking rhythmically back and forth on their obligatory porches, ears cocked for the tinkle of the approaching Good Humor man.

The core problem of New Urbanist dogma is neither its stated principles nor its architecture per se—there's room for plenty of styles in a democracy—but its pious simulation of consent. While we can all be grateful for the restored interest in the textures and adjacencies of the traditional walking city that the CNU has helped to promote, there is something deeply wrong in the attempt to distill these relations into a uniform, replicable set of forms, to insist that any one architectural interpretation of "tradition" represents the accumulated wisdom of the species. In the effor to codify the architecture of the Gulf—or New Orleans—in narrowly fixed and eternal normative patterns, this slim set of "correct" generalities yields architectural Muzak and laws that insist you listen to nothing else. Get those damn pink flamingos out of the yard before the taste police arrive! Fixated on perfection, New Urbanism dreams of spotless cities resistant to patina and eccentricity the soul-numbing sameness of multinational consumer culture. In its neocon brandscape, "aesthetic" considerations always trump socia forms of variety, denying the real genius of urban growth and transformation: the power of the city to be its own social and morphologica laboratory, its ability to define its singularity through the adventure o invention, conflict, and agreement. New Urbanism founders not on an excess of affection for the city but on an excess of fear of its uncontrollable diversity. ■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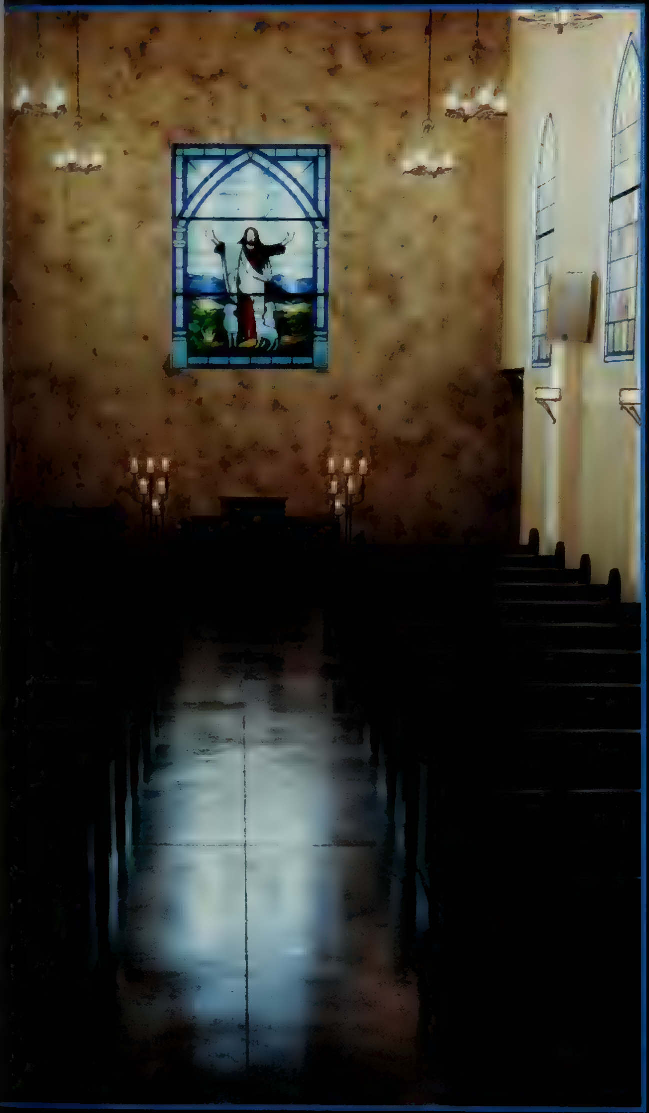

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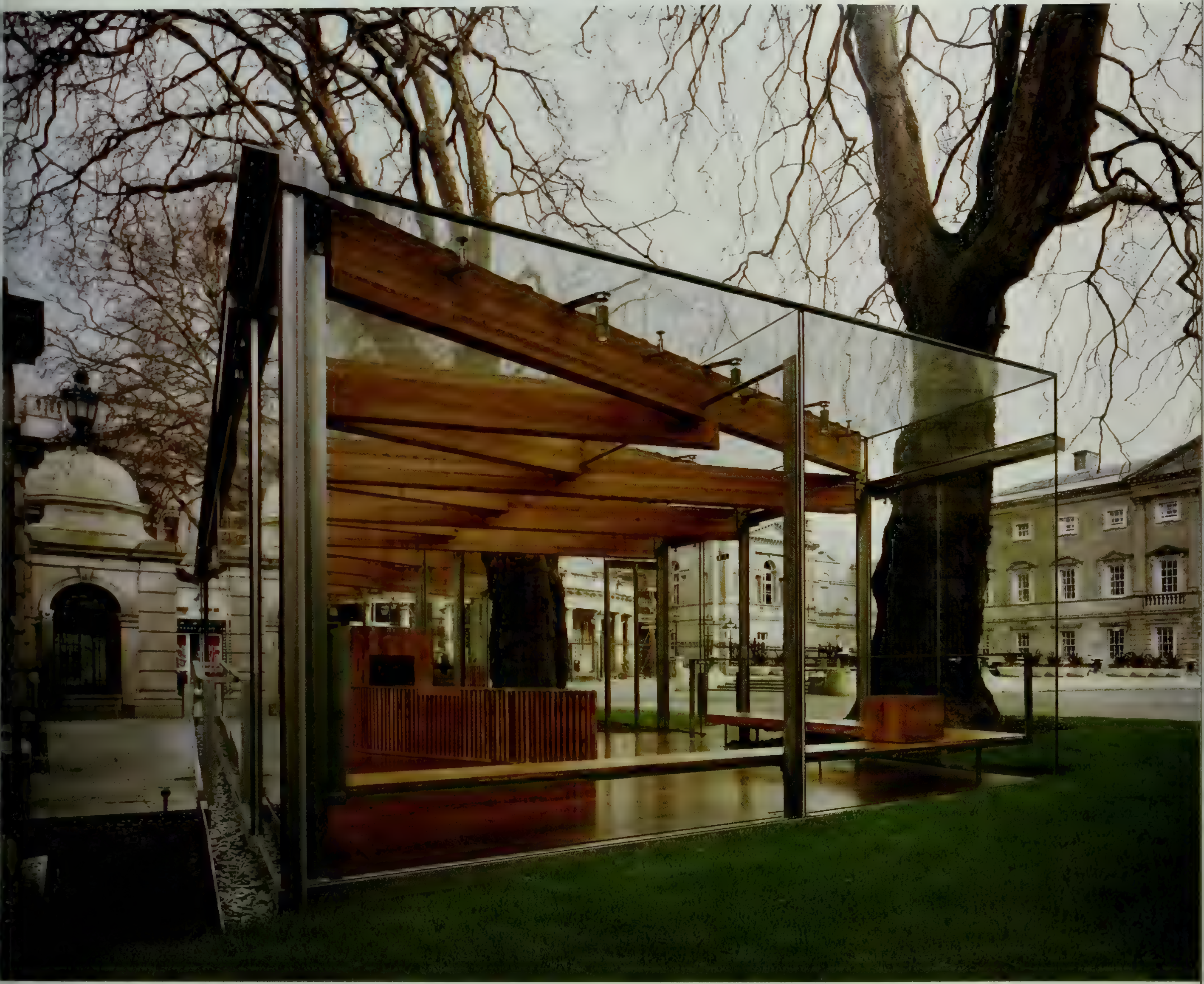


Beth Broome

Pavilion achieves security through transparency

itil recently, guards at Leinster House, home to the Republic of Ireland's rliament, the Houses of the Oireachtas, knew all that passed through the mpound's gates in Dublin. A simple nod gained one entrance into the fore- urt and from there on into the parliament, which since the 1920s has cupied the mansion originally built for the Earls of Kildare and Leinster.

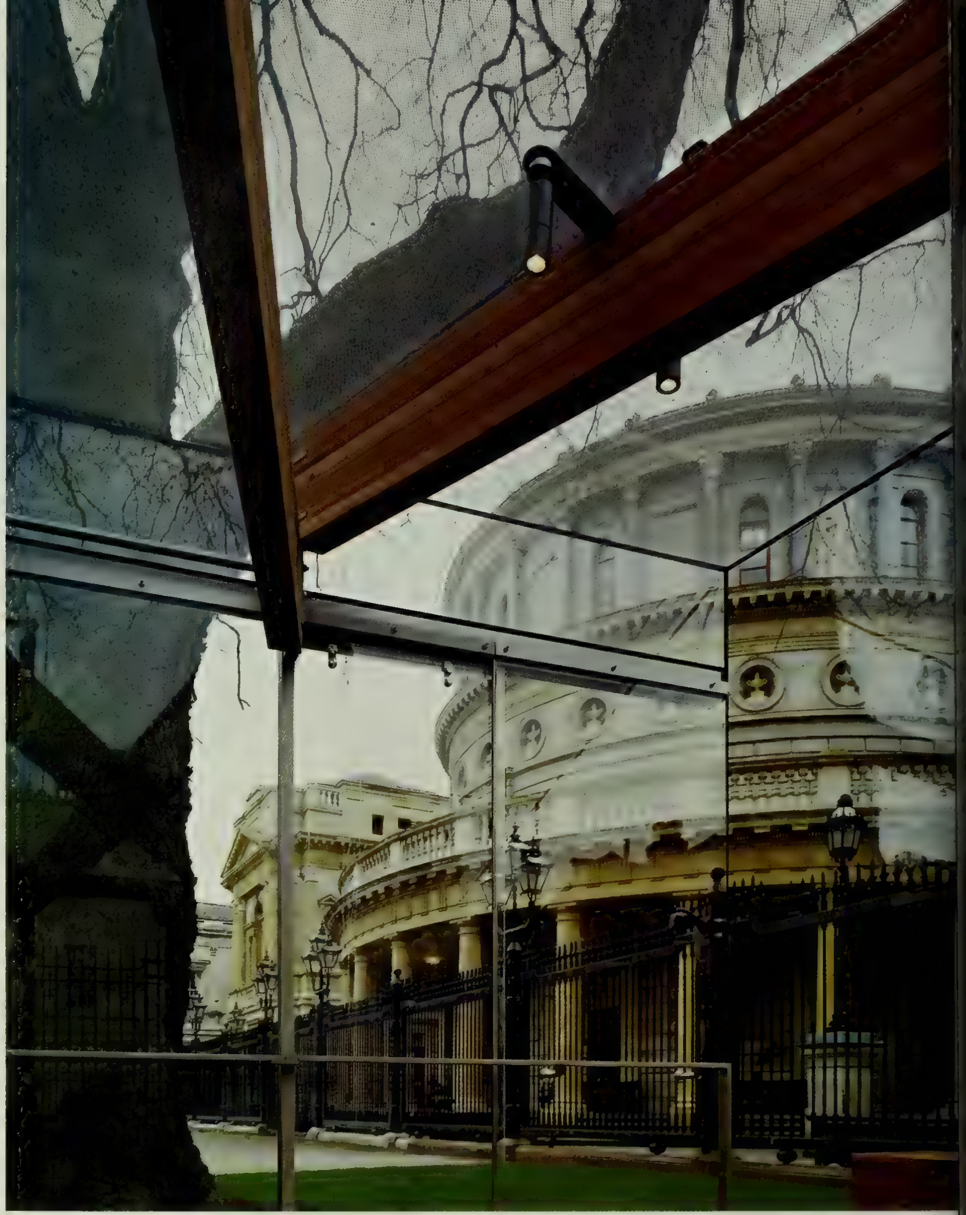
Times have changed. To reflect this, Ireland's Office of Public Works instituted an initiative to bring government ildings up-to-date. To this end, the young Dublin-based architecture firm Bucholz/McEvoy (with Paris-based RFR gineers) was recruited to respond to 21st-century security needs at Leinster House by undertaking a project that cluded a renovated vehicular entry and stone exit station, and a new "welcoming" pavilion.

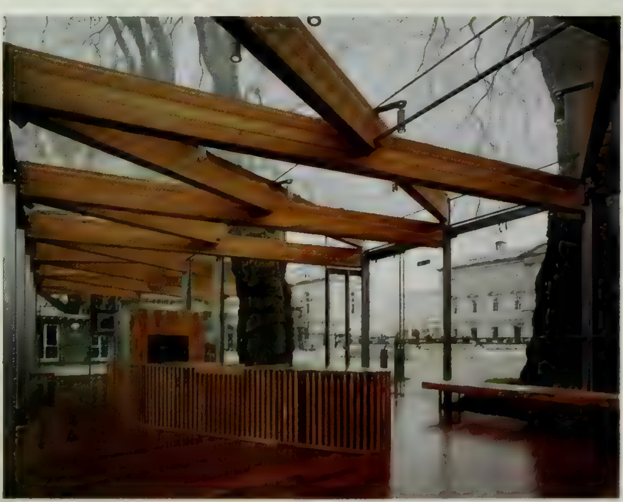
Rather than taking a fortresslike approach, the Office of Public Works called for the Leinster House Pavilion to open and transparent, serving as a metaphor for the ideals of government conduct. "The installation is more out security through surveillance and having a panoptic view," says Merritt Bucholz. "There is nothing particularly

defensive about it." At the same time, the structure had to help control the entry of parliamentarians and visitors without disrupting two existing London plane trees in front of Leinster House or views of the historic building. Not least important, Bucholz recalled with a chuckle, the firm was told that the pavilion—which was conceived in anticipation of Ireland's presidency of the European Union, when heads of state would be regular visitors—had to "look good on CNN."

To accommodate the needs of the long-time guards, the pavilion's desk was designed first. Bucholz/McEvoy built a plywood mock-up and plopped it down in the grass to show the employees. The pavilion evolved around this central element, made from Irish marble and vertical slats of Irish oak. Conforming to the desk, the flow of foot traffic, the location of the plane trees, and other spatial constraints, the pavilion emerged as trapezoid in plan. Fabricated in Turin, Italy, and assembled on-site, its walls are made of white, heat-strengthened laminated glass. To optimize transparency, most of the structure is placed in the roof, with glue-laminated larch-wood "X" beams providing lateral restraint so that only slender stainless-steel columns were required. The roof's glazing, with heating wires incorporated into the PVB interlayer, uses silkscreen patterning to provide shading.

Leinster House Pavilion serves as a pleasing transitional space. Providing a bridge between the pedestrianism of the civilian world and the pomp of Leinster House, it at once defers to the mansion and surrounding buildings while making a statement of its own. ■





Snaking between the London plane trees, th Leinster House Pavilio shepherds visitors from the street into the forecourt of the democrati heart of the Republic o Ireland.

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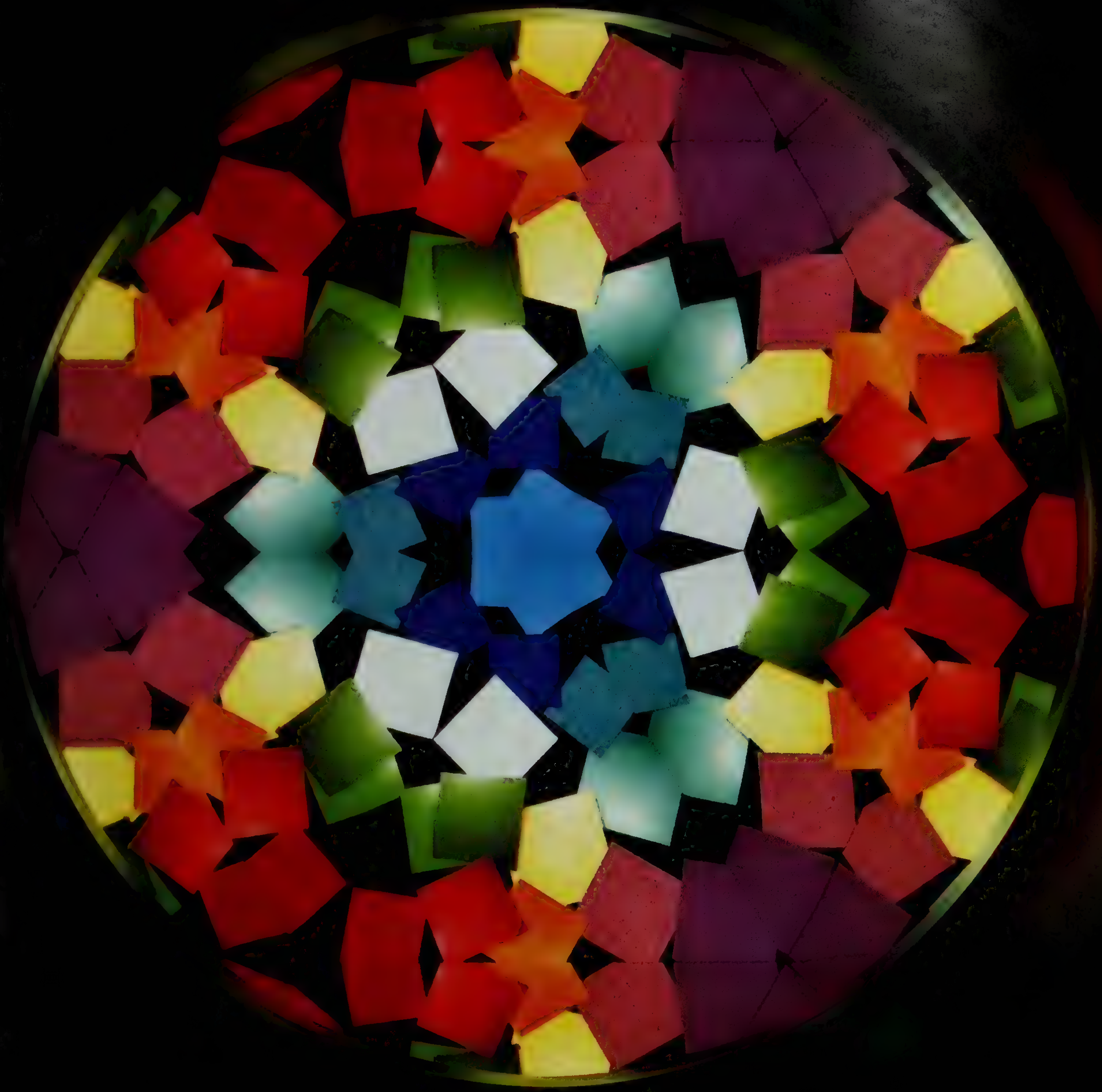

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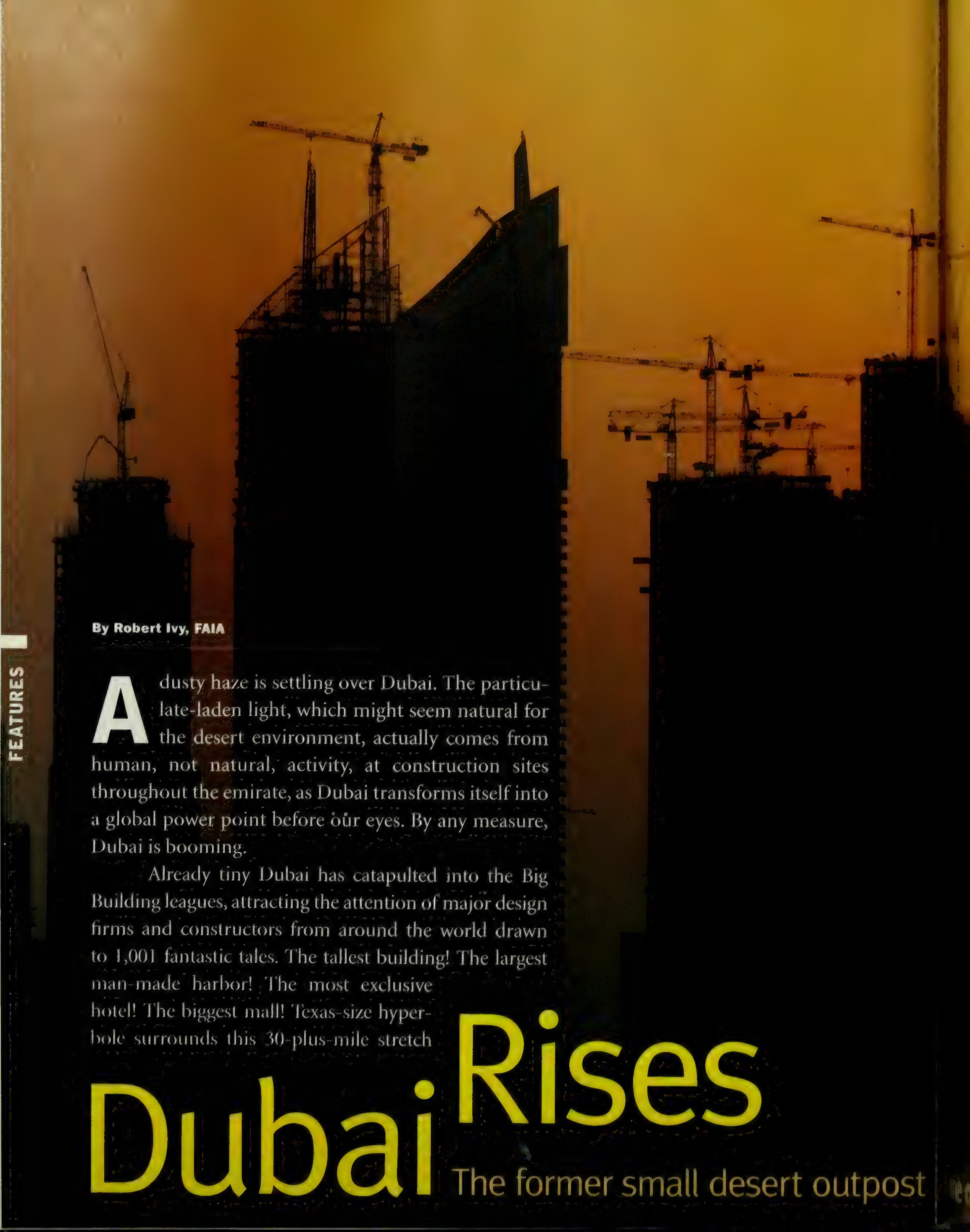

Dubai Rises

The former small desert outpost

By Robert Ivy, FAIA

A dusty haze is settling over Dubai. The particulate-laden light, which might seem natural for the desert environment, actually comes from human, not natural, activity, at construction sites throughout the emirate, as Dubai transforms itself into a global power point before our eyes. By any measure, Dubai is booming.

Already tiny Dubai has catapulted into the Big Building leagues, attracting the attention of major design firms and constructors from around the world drawn to 1,001 fantastic tales. The tallest building! The largest man-made harbor! The most exclusive hotel! The biggest mall! Texas-size hyperbole surrounds this 30-plus-mile stretch

Dubai Marina (below), developed for 17 buildings, is going up at lightning speed. Sheik Zayed Road (above) is lined with growing rows of skyscrapers.

me one of the hottest construction markets in the world

along the Persian Gulf adjacent to Abu Dhabi, but amazingly, much of the hype is borne out by the facts. The building explosion deserves the Wild West analogy: Dubai is building big and fast.

The wealth, obviously, comes from oil. However, the powers that be, specifically the Crown Prince and the ruling family, have been transferring the economic base to other sources, particularly real estate, a situation abetted by adjustments to the land-ownership laws, including freehold property, a significant change announced in 2002. As a result of these measures and a growth in the commercial and industrial sectors, Dubai enjoyed 17 percent growth last year, a number that far exceeds China's. Other investors, including individuals and corporations from the Middle East, India, and Europe, are depositing dollars into the burgeoning economy. They are drawn to its Free Trade Zone status, its relative stability, its strategic location (the closest warm winter getaway from Europe), and to the dynamics of the moment. If you're a developer or an architect and you're not in Dubai right now, you're not a major player.

For architectural and planning companies dreaming of golden cities rising from the desert, several key developers control the majority of the action. The EMAAR group, a public joint-stock company that is listed on the Dubai financial market, first saw the light of day in 1997. Since that time, it has initiated increasingly ambitious projects, such as the Burj Dubai District, a major urban development of approximately 500 acres currently under construction. It will include the Burj Dubai Tower (billed as the world's tallest and designed by the Chicago office of Skidmore, Owings & Merrill), the world's largest mall (the Dubai Mall), a lake, a mixed-use historicist residential/light commercial area (called Old Town), parkland, a lake, and a business hub, among other features. No pipe dream—the cranes are already whirling, preparing the site, while the tower continues to rise. (RECORD intends to follow its development in subsequent articles.) Besides local practices, large foreign firms that have worked, or are busy, in Dubai include HOK, NBBJ, RMJM, Foster and Partners, Zaha Hadid, Arthur Erickson, Arizona-based Architekton, and others from Miami, Toronto, England, Spain, and India. Almost 300 high-rises are now under construc-

IF YOU'RE NOT IN DUBAI RIGHT NOW, YOU'RE NOT A MAJOR PLAYER.

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Another city rises on the waterfr

Images of Dubai's skyline, with its growing row of ambitious, often otherworldly high-rises, have begun to capture the world's imagination. But located about 30 miles west of this cluster, a new development along Dubai's coastline could be even more astonishing.

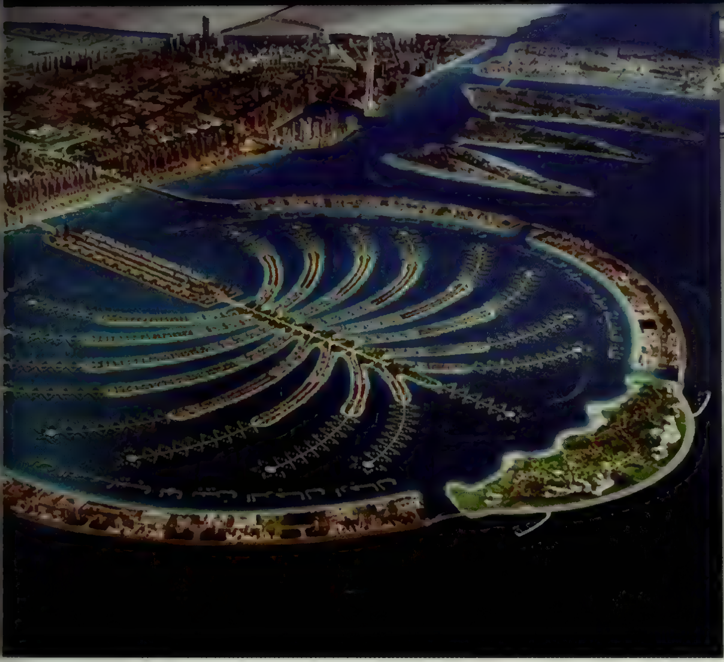
The mixed-used project, called Dubai Waterfront (opposite, top three), is essentially a new city. It is being master planned by New York–based Gruzen Samton Architects and developed by state-run Nakheel developers. The area, whose total size has not been released, will feature its own airport, and more than 150 communities, with a population of about 700,000. This includes ascending rows of high-rise offices and apartments, a large park, plazas, mosques, schools, boulevards, and a canal. The city's focal point will be a downtown core with its own inner and outer harbors, called Madinat Al Arab. This zone will be highlighted by a skyscraper by Pei Partnership (see main story). "We have almost complete freedom," says Gruzen Samton principal Jordan Gruzen, FAIA.

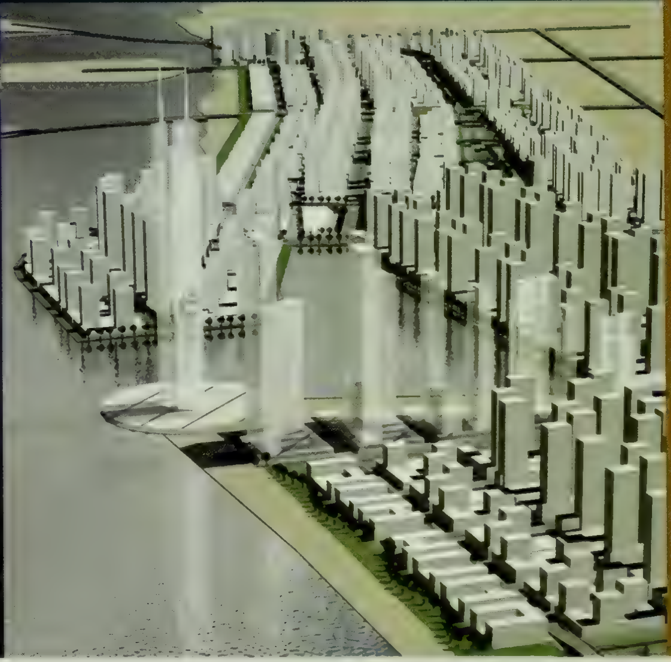
The project, first conceived a year ago, began moving forward around last July, he says, when about $1.4 billion in property was sold for phase one of Madinat Al Arab. Construction should begin by the end of this year. The design vision for the new city is very contemporary, says

firm architect Scott Ol
He notes that though
the region relies on his
"simulacrum," the firm
asked "to recreate Geo

Another major co
nent of the developme
astounding (some mig
outlandish) developme
landfill in the Persian G
called Palm Jebel Ali (t
lar communities, Palm
and Palm Deira, are be
developed nearby). It w
shaped like a giant pal
Palm Jebel Ali, which G
Samton is helping to m
plan, will be about 4.7
in diameter at its wide
point, containing boule
greenways, houses, ho
apartments, retail, and
nas. Giant curving rows
"fronds," of house-lined
will radiate from a 1.5-m
long central spine, or "t
Commercial buildings
hotels will be located o
edges, or "crescent." Th
seabed has already be
dredged for the project
land has been delivere
the island over the pas
years. Another landfill
opment, being planned
Nakheel's designers, is
The World. It will allow
investors to purchase v
islands shaped like cou

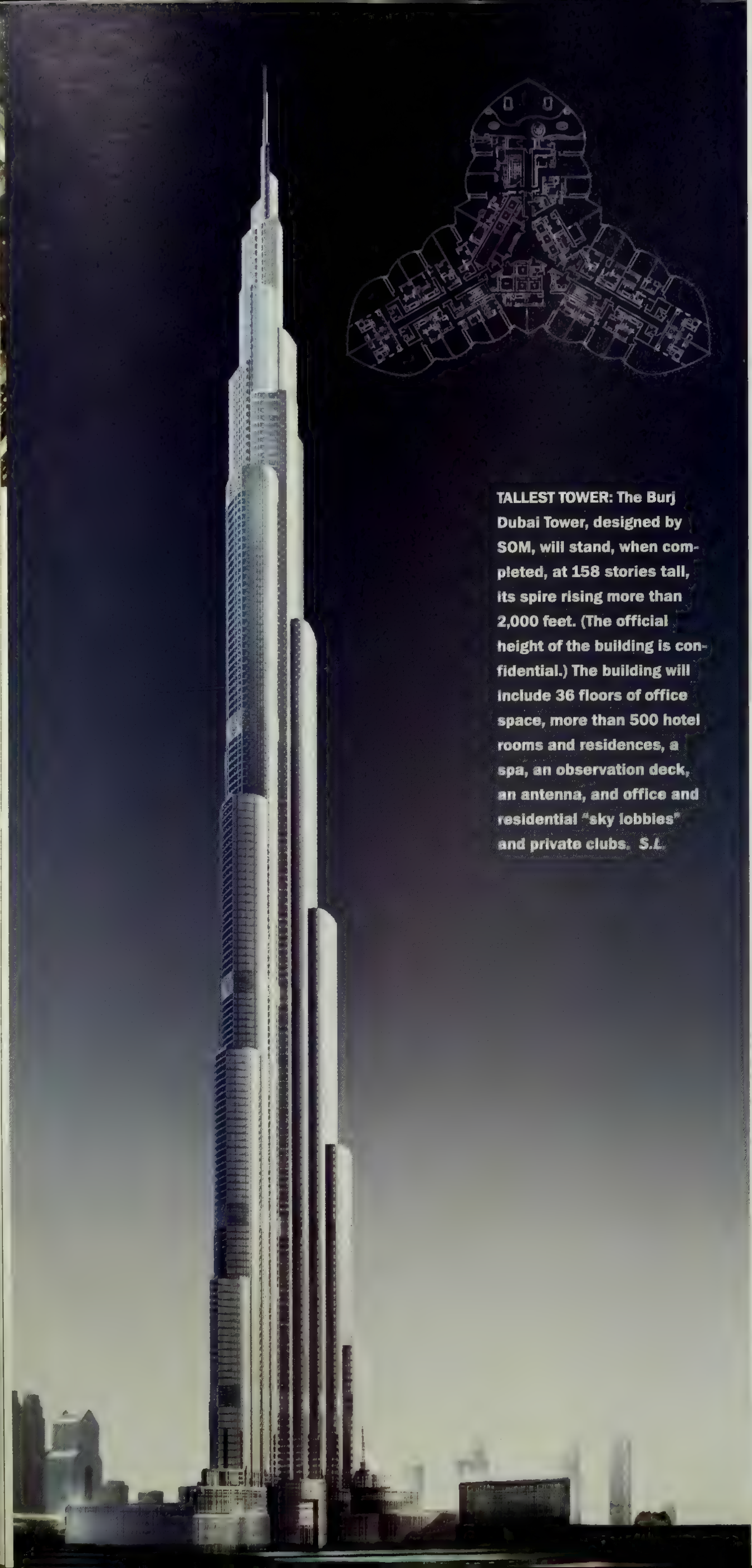
Work on Dubai Wa
is still being master pla
Completion will be in ab
years, although Samton
"These things have a te
to start growing in unpr
dictable ways." *Sam Lu*





Snapshots from the author's recent trip to Dubai include (left to right): New development on Dubai Creek; Sheik Zayed Road; the Dubai Marina; cranes stretching as far as the eye can see.

For more of the author's travel photographs, go to www.archrecord.com.

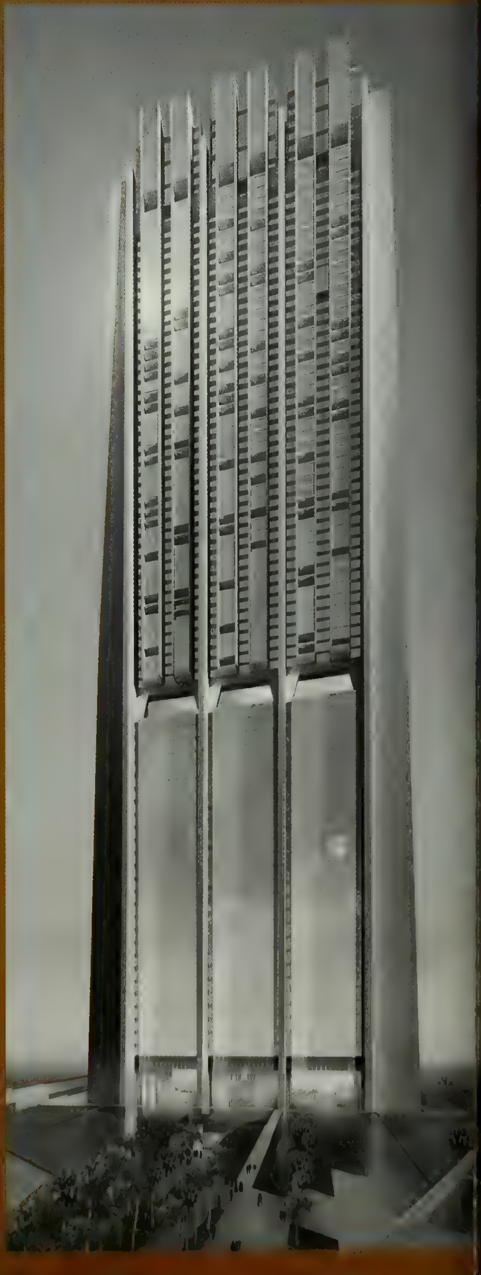


TALLEST TOWER: The Burj Dubai Tower, designed by SOM, will stand, when completed, at 158 stories tall, its spire rising more than 2,000 feet. (The official height of the building is confidential.) The building will include 36 floors of office space, more than 500 hotel rooms and residences, a spa, an observation deck, an antenna, and office and residential "sky lobbies" and private clubs. *S.L.*

Projects on the horizon

Foster and Partners
Norman Foster has designed a landmark tower in Dubai scheduled for completion in early 2008. One Central Park is located on a corner site in the Dubai International Finance Centre, a gigantic capital market with several new buildings. The 1,076-foot, 80-floor tower will include a mix of 25 floors of office space, with 520 apartments on 47 floors above. These are crowned by 12 penthouses representing what Foster

describes as "the highe
apartment in the world
The building sits o
landscaped plinth and f
tures a quadruple-heigh
foyer. Like the Swiss Re
in London, its structure
clearly expressed, this
through four tapering, A-
concrete fins buttresse
the east and west eleva
The 25 floors of column
offices are held within t
the fins, beneath the sk
lobby and residential fl
above. *Lucy Bullivant*



tion, according to Emporis Research.

Nakheel, a real estate company dealing in freehold property, bears responsibility for additional wonderments, including the fantastically shaped islands in the Gulf—The Palms—which are near completion. An equally ambitious new canal, intended to reach 75 miles into the heart of the country, drew the American architectural firm Gruzen Samton to the emirate, ultimately engaging them in the planning for an entirely new town called Dubai Waterfront. Jordan Gruzen, FAIA, characterizes the work, which includes a dredged canal system, transit, and parks that are overlaid with a series of residential plots, as "amazing … the kind of idealized project you might give to a senior class for a semester." His company's working relationship has broadened to Nakheel's second "palm" development, Palm Jebel Ali.

New York's Pei Partnership shares Gruzen's experience in Dubai—both have seen initial discussions morph into other, larger work. According to partner D.D. Pei, his firm's primary explorations with a developer eventually led to a commission for yet another mega-tower, currently located at the critical head of the harbor in Dubai Waterfront, a beacon from the water. How tall is tall? Pei says that plans for this tower initially began at 650 meters (2,132 feet) and have since gone higher. By comparison, remember that New York's unbuilt Freedom Tower, intended to be the world's tallest, has been pegged at 1,776 feet. While Pei's project remains temporarily on hold, he is optimistic that it will start soon.

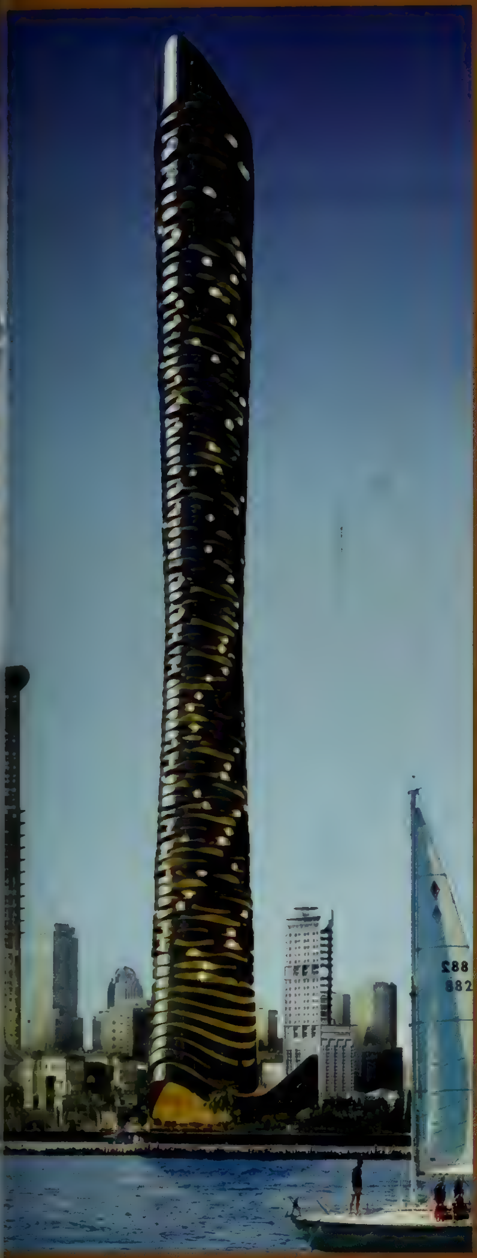
The SOM and Pei towers, on completion, will lead a cavalcade of other tall buildings, most of which top out between 40 and 50 stories. The surreal spirit of the place seems magnified by perspective, with slice after vertical slice of hotels and condos lining up along the primary strip, Sheikh Zayed Road, their soaring flanks painted in the pastel Gulf light. The entire assemblage is punctuated by the whirs and clicks and droning engines of building taking place—a three-dimensional, atonal composition.

Reality in Dubai can prove even more bizarre than photographs of it. Traffic along the major arterial rivals that of Los Angeles or Phoenix, since every automobile essentially moves along a single vector, from the embayment at the heart of the older city to Abu Dhabi. Along the way, with a few jogs to the seaside or down the occasional cross street, the visitor encounters developments such as Internet City, a free trade zone that houses such familiar names as Oracle and Microsoft; or Media City, home to 850 companies and 5,000 workers. Add the financial center and the future "Dubailand," a $5 billion resort area, and you get something of the picture: Dubai is where Palm Springs meets Chicago.

> **REALITY IN DUBAI CAN PROVE MORE BIZARRE THAN PHOTOGRAPHS OF IT.**

Questions abound for the visitor, such as who are the residents, exactly, and who is building all of these projects? Actually, few native citizens perform manual labor, relying on an immense influx of international workers, who flock to the emirates from Sri Lanka, the Philippines, Indonesia, and Malaysia for the work. With the extreme volume of major projects under construction, and others on the way, this cheap labor could become a destabilizing factor in the future.

The inevitable question that hovers in the air, coating the high-rises like the prevailing construction dust, is whether this bubble could be made of concrete. Jordan Gruzen has no crystal ball, but he has increasing confidence. Instead of sandcastles, he sees solid growth. "Each day, we see more signs of strength," he says, as the international dollars flow in and the new towns take shape. What the character of such a state will become, conceived in such white-hot heat, remains to be determined after the dust has settled. ■



rchitects

rchitects, a London-
firm established two
ago, is well on its way
commission for a 93-
tower in Dubai. The
as won a competition,
y Dubai-based Kordahi
opments, to build the
i Tower in the Dubai
a development, where
ntly 17 towers are under
ruction.

Firm director Tavis Wright
ds to bring sustainable
n to the desertlike
te, an idea that seems
ly ignored in Dubai construction. The tower's solar panels will attach to the exterior cladding and will rotate as the sun moves across the sky, making one rotation per day. The exterior's curvaceous, modulated-aluminum cladding, which evokes local sand dunes, will hide the building's structure.

Construction will start in November 2006, with an opening in early 2009. The mixed-use program includes five floors for the lobby, retail, and gym space, with 10 floors of parking, and 78 floors of residences. *Sarah Cox*

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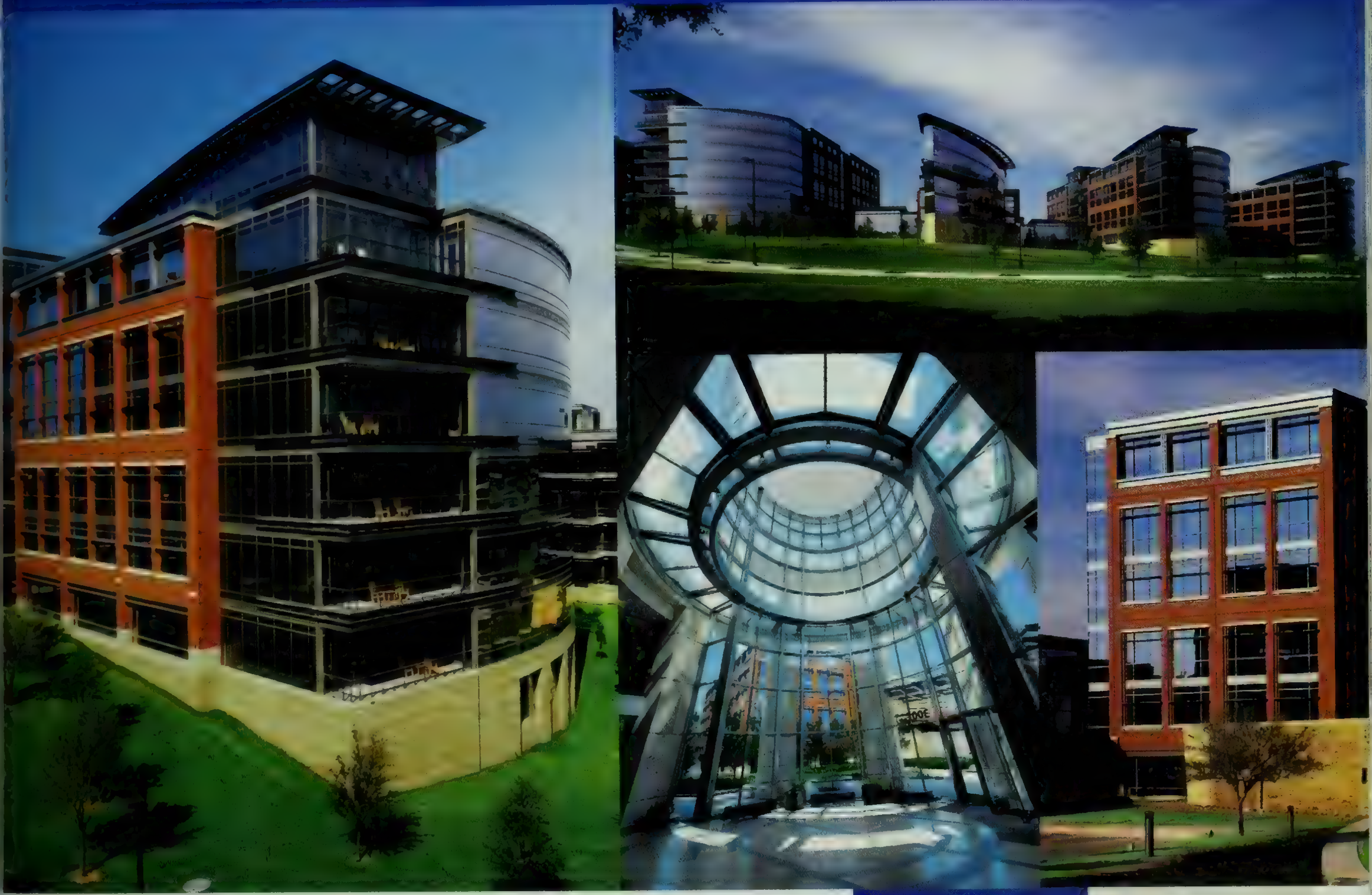
RADIOSHACK HAD QUESTIONS.

WE HAD ANSWERS.



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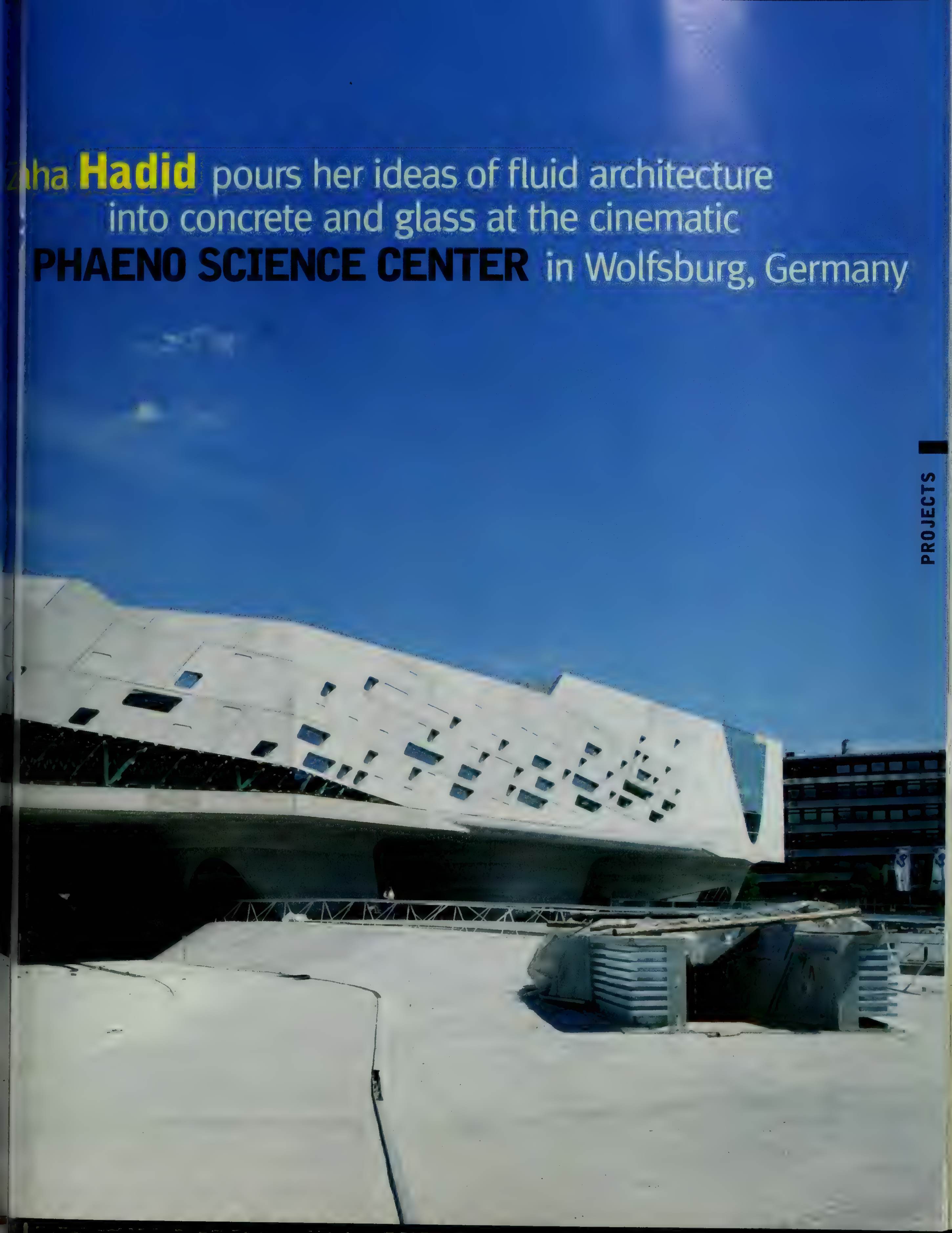
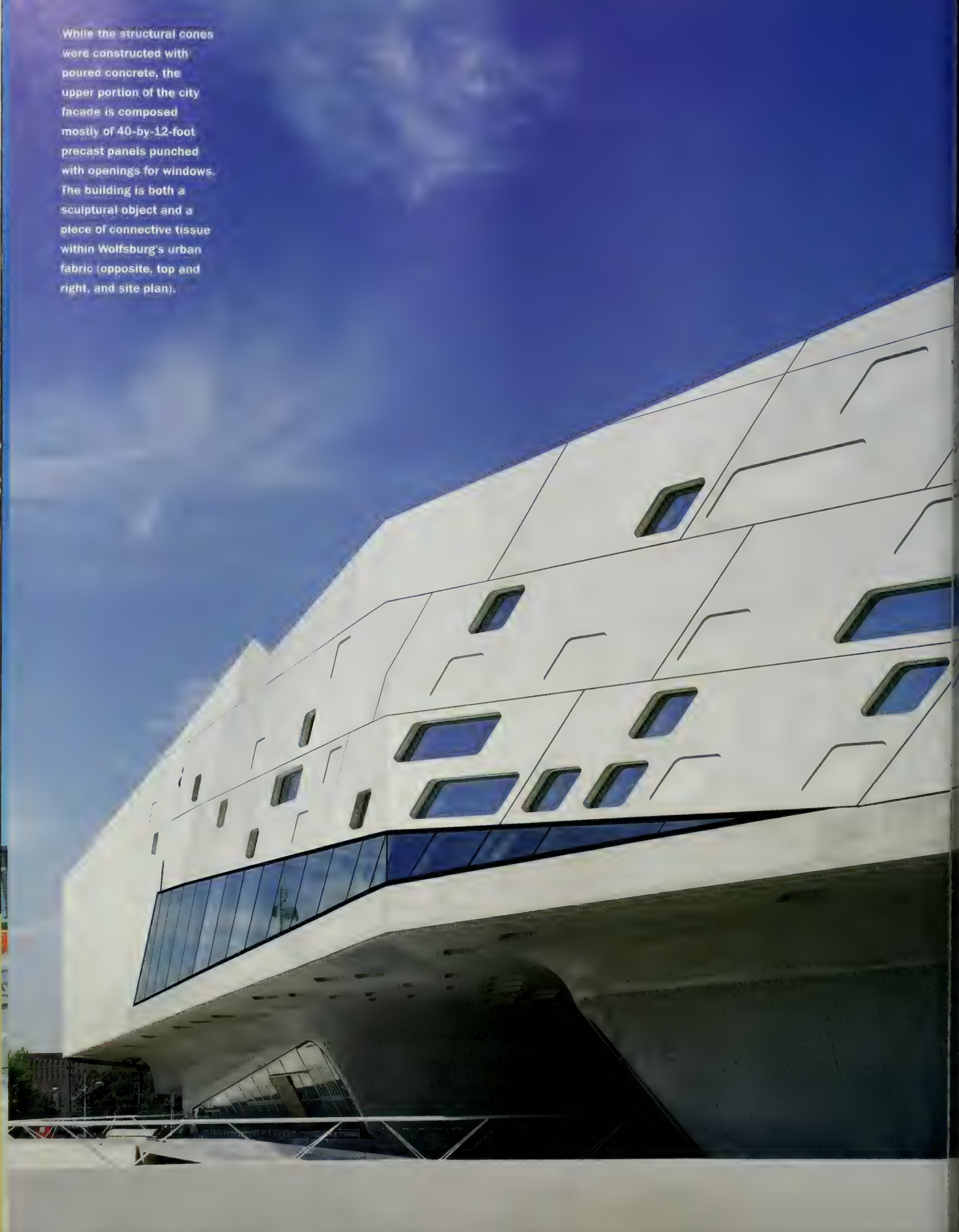
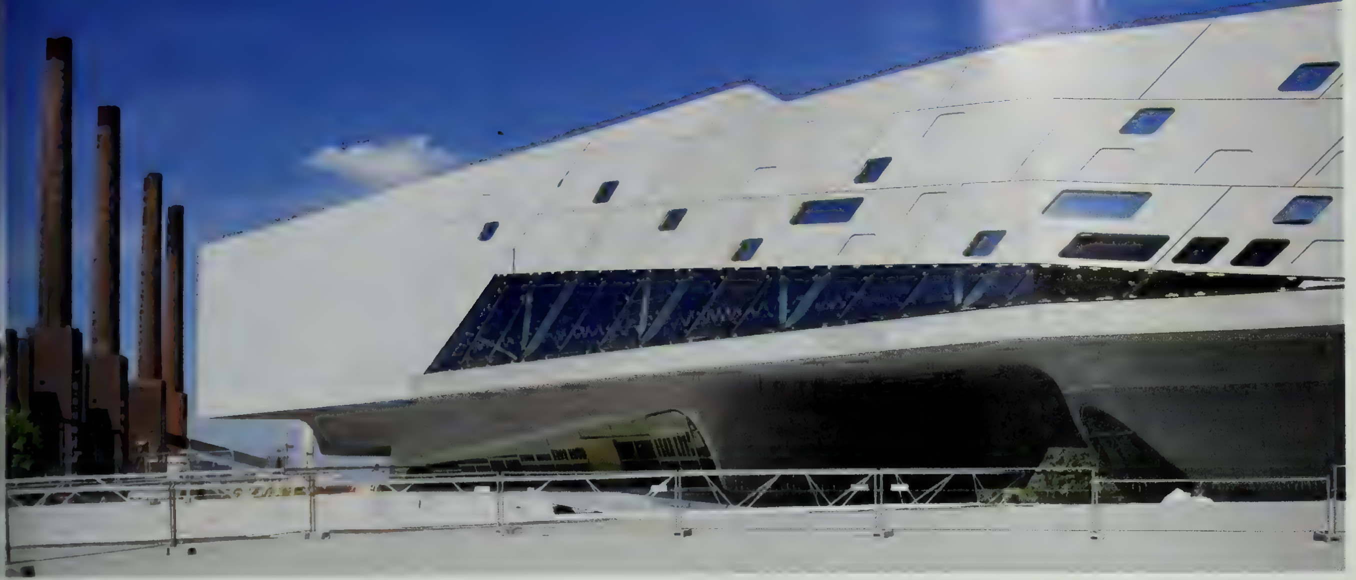
With Volkswagen's 1930s factory in the background, phaeno floats above a plaza that connects the city with its industrial zone. On the north, it faces train tracks (right) and the VW complex.

Zaha **Hadid** pours her ideas of fluid architecture into concrete and glass at the cinematic **PHAENO SCIENCE CENTER** in Wolfsburg, Germany

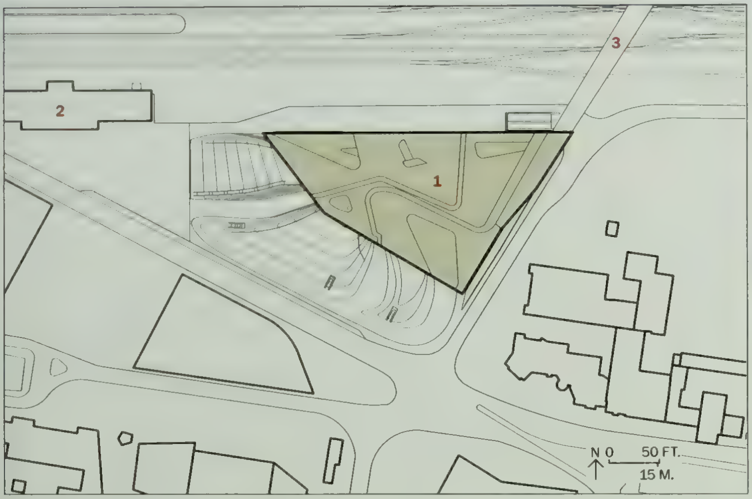




While the structural cones were constructed with poured concrete, the upper portion of the city facade is composed mostly of 40-by-12-foot precast panels punched with openings for windows. The building is both a sculptural object and a piece of connective tissue within Wolfsburg's urban fabric (opposite, top and right, and site plan).



. phaeno Center
. Train station
. Bridge to Autostadt



y Clifford A. Pearson

Five years ago, a town built as a showcase of 20th-century industrial production hired Zaha Hadid to lead it into the 21st century. The selection seemed inspired. Who better to create an icon of the information age than the high priestess of avant-arde architecture herself? The choice—after an international ompetition that included Enric Miralles/Benedetta Tagliabue from arcelona, Barkow Leibinger from Berlin, and Auer + Weber from Stuttgart s finalists—had the right sense of daring, since Hadid in 2000 was still nown mostly for her seductive drawings and had completed few buildings. ast forward to November 2005 and the opening of the phaeno Science enter in Wolfsburg, Germany: Hadid, who won the Pritzker Prize the year efore, was riding a wave of acclaim after the completion of her Central uilding at BMW's factory in Leipzig [RECORD, August 2005, page 82], the rdrupgaard Museum Extension in Copenhagen, and the Hotel Puerta mérica in Madrid, where she designed a floor of guest rooms whose urvaceous, milky white surfaces seem pulled from some architectural reamscape [RECORD, September 2005, page 96]. So does phaeno live up to s hype as one of the most anticipated projects of the year?

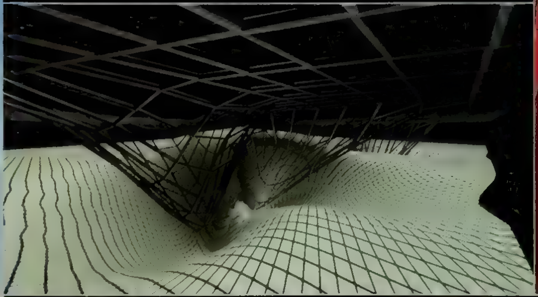
It does, although it is flawed.

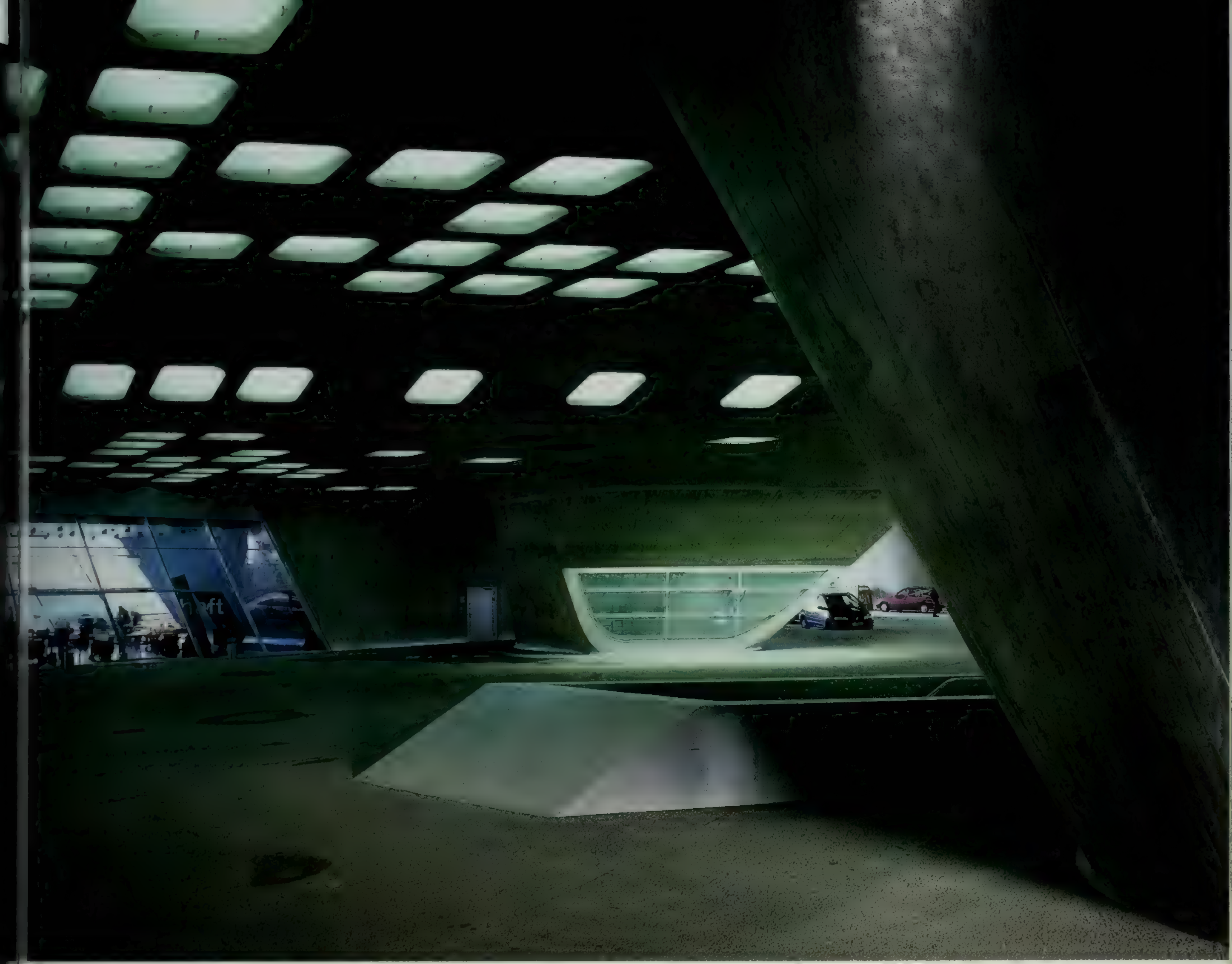
First, some history on its context. Established in 1938 as a home for the Volkswagen Works and the people employed at the giant car factory, Wolfsburg has been pretty much a company town ever since. In the 1960s, the city added a layer of cultural institutions with such buildings as a library/cultural center by Alvar Aalto and a theater by Hans Scharoun. But it remained largely dependent on Volkswagen as its economic engine. Ironically, Volkswagen itself recognized the need to diversify and built a high-tech theme park devoted to the joys of automobile ownership adja-

Project: *phaeno Science Center, Wolfsburg, Germany*
Architect: *Zaha Hadid Architects—Zaha Hadid, Patrik Schumacher, Christos Passas, Sara Klomps, Gernot Finselbach, Helmut Kinzler, David Salazar, Janne Westermann, Chris Dopheide, Stanley Lau, Eddie Can, Yoash Oster, Jan Hubener, Caroline Voet, Silvia Forlati, Guenter Barczik, Lida Charsouli, Marcus Liermann, Kenneth Bostock, Enrico, Kleinke, Constanze Stinnes, Liam Young, Chris Dopheide, Barbara Kuit, Niki Neerpasch, Markus Dochantschi*
Associate architect: *Mayer Baehrle Architects*
Engineers: *Adams Kara Taylor, Tokarz Freirichs Leipold (structural); NEK, Buro Happold (services)*
Lighting designers: *Fahlke & Dettmer; Office for Visual Interaction*
Construction managers: *Assman GmbH; Dr. W. Swoboda*

A winning streak begins

From 1999 to 2001, Zaha Hadid won seven international design competitions, transforming a boutique office of 15 people into what it is today: a major firm with 120 employees. The streak began with the National Center of Contemporary Arts (MAXXI) in Rome and the Bergisel Ski Jump in Innsbruch, then continued with phaeno; a ferry terminal in Salerno, Italy; the Placa de las Arts in Barcelona; a master plan in Singapore; and a museum extension in Copenhagen. By raising her building one story off the ground (sketch, bottom) and creating an undulating plaza underneath the building (below), Hadid added an unexpected element to the program. The jury was impressed. Although fine-tuned over time, the design—with its 10 structural "cones" that contain programmed spaces such as a bar and a gift shop (right)—remained remarkably intact during the course of the project.





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oating above it.
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shop reside in the
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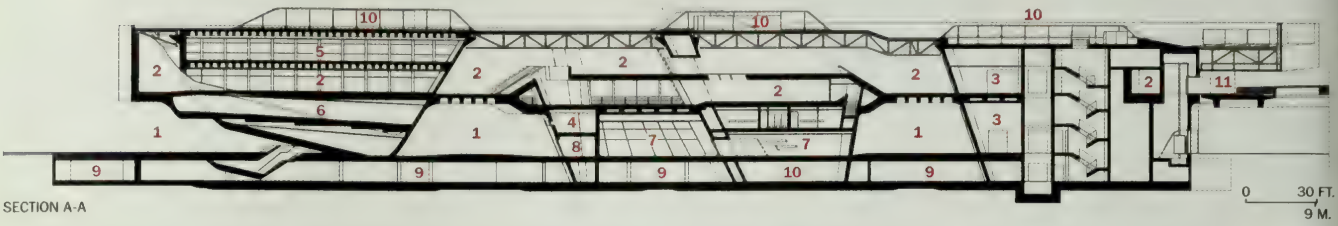
cent to its factory complex. Called Autostadt and designed mostly by Gunter Henn in High Modern style with crisply detailed glass-and-steel buildings, a few swoopy World's Fair-like pavilions, and lush landscaping [RECORD, November 2000, page 148], the park opened in 2000 to coincide with the Hanover World Expo just 40 miles to the west. Today, two million people visit Autostadt's car museum, corporate-brand pavilions, restaurants, and shops each year.

At the same time Autostadt was under nstruction, Wolfgang Guthardt, the head of Wolfsburg's department of lture, schools, and sport, proposed building a hands-on science useum to further broaden the city's range of attractions. Guthardt ampioned what became phaeno, helping to develop the program and ow serving as the director and chairman of the phaeno Foundation. The Greek word *phaeno*—the root of the English *phenomenon*—means o cast light on" or "discover.") "This is a practical town, not a university wn," states Guthardt. "So we wanted to create a hands-on place where veryone, not just kids, could discover things."

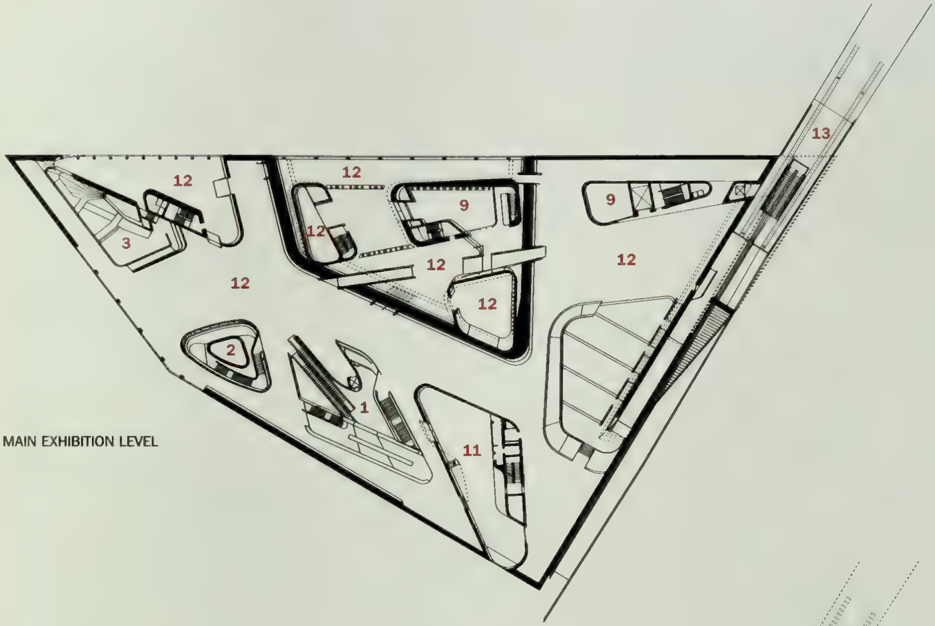
The phaeno site was a leftover triangle strategically located adjacent to the railroad station and between the city proper and Volkswagen's sprawling factory and theme park. With the reunification of Germany in 1989, Wolfsburg's rail traffic revived and its station became a stop for high-speed trains to Berlin, 100 miles east. Hadid's design for the 130,000-square-foot science museum boldly responds to its site, engaging Autostadt while also connecting the city's commercial and residential core to the industrial sector on the north. The city's original plan placed living and manufacturing in discrete zones, separated by the Mittelland Canal; Hadid's building helps subvert that division. And by pushing her museum up close to the canal, she initiated an intriguing dialogue between her brand of baroque Modernism and the more romantic, but equally over-the-top Modernism of Autostadt. Both projects unfold as a series of cinematic moments and relate to each other as the films of two directors might (say, Stanley Kubrick's phaeno and

"THE IDEA WAS TO OCCUPY STRUCTURE," SAYS HADID OF THE SPACES IN THE CONES. "STRUCTURE BECOMES PROGRAM."

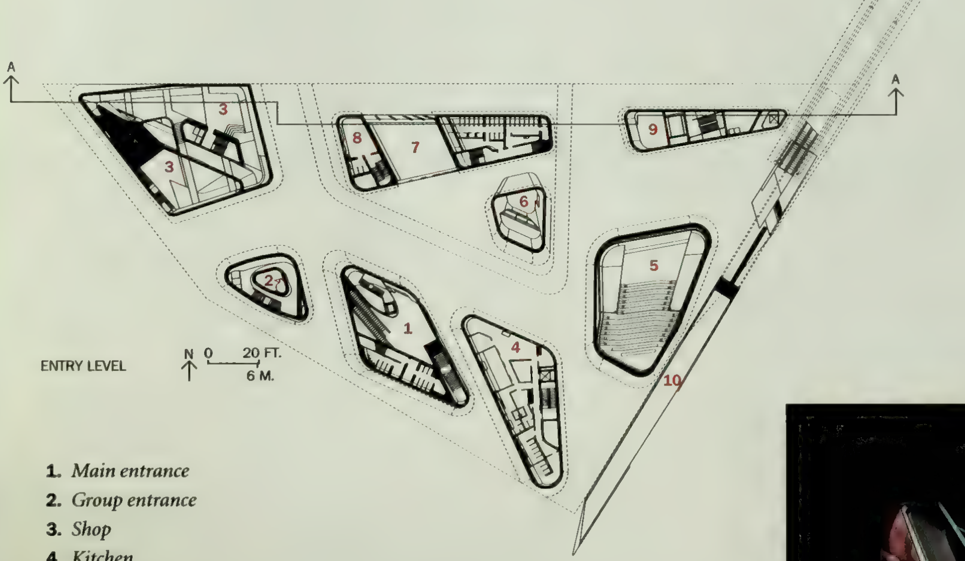


SECTION A-A

1. *Plaza*
2. *Exhibition*
3. *Laboratory*
4. *Staff*
5. *Administration*
6. *Shop*
7. *Event space*
8. *Workshop*
9. *Parking*
10. *Mechanical*
11. *Bridge to Autostadt*



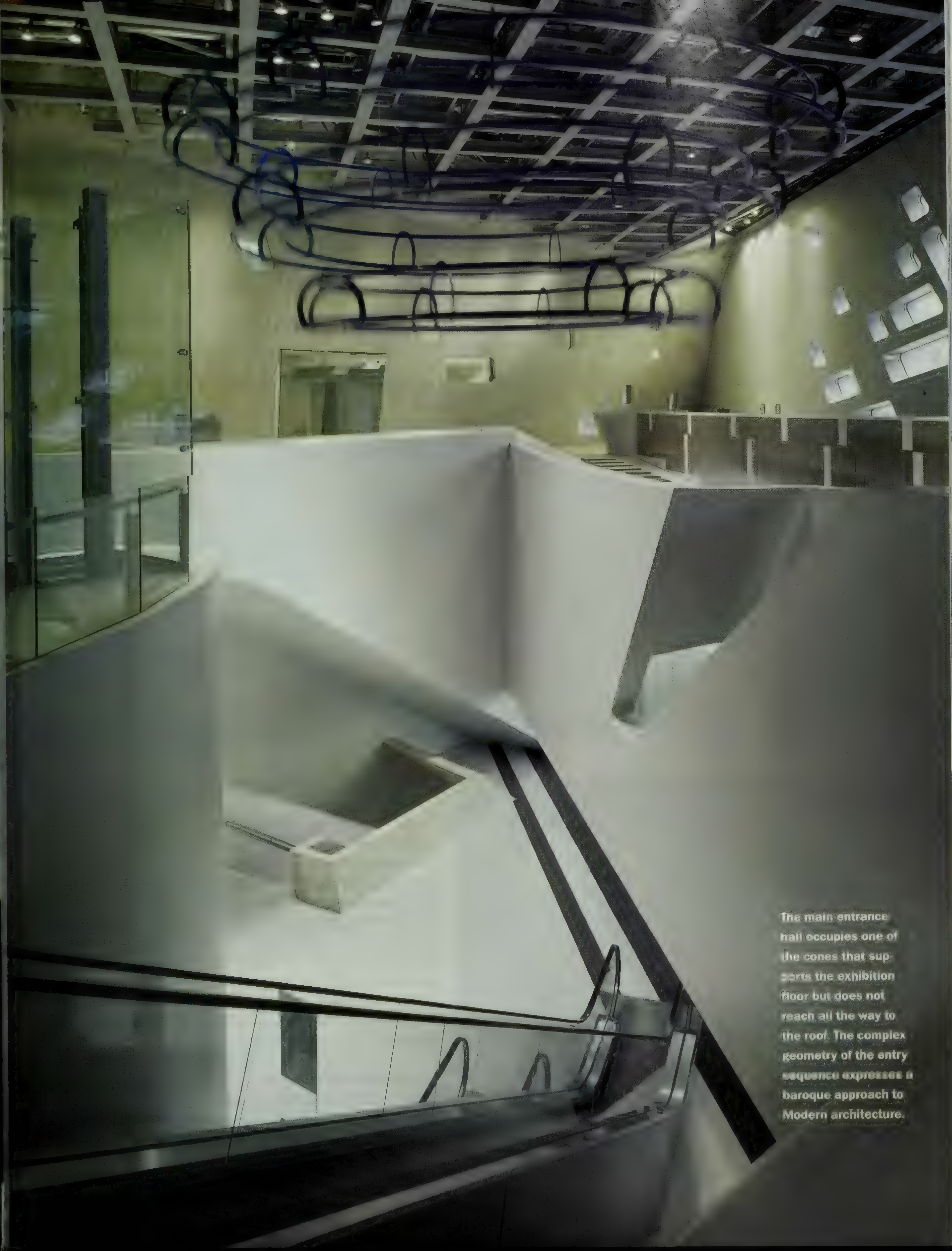
MAIN EXHIBITION LEVEL



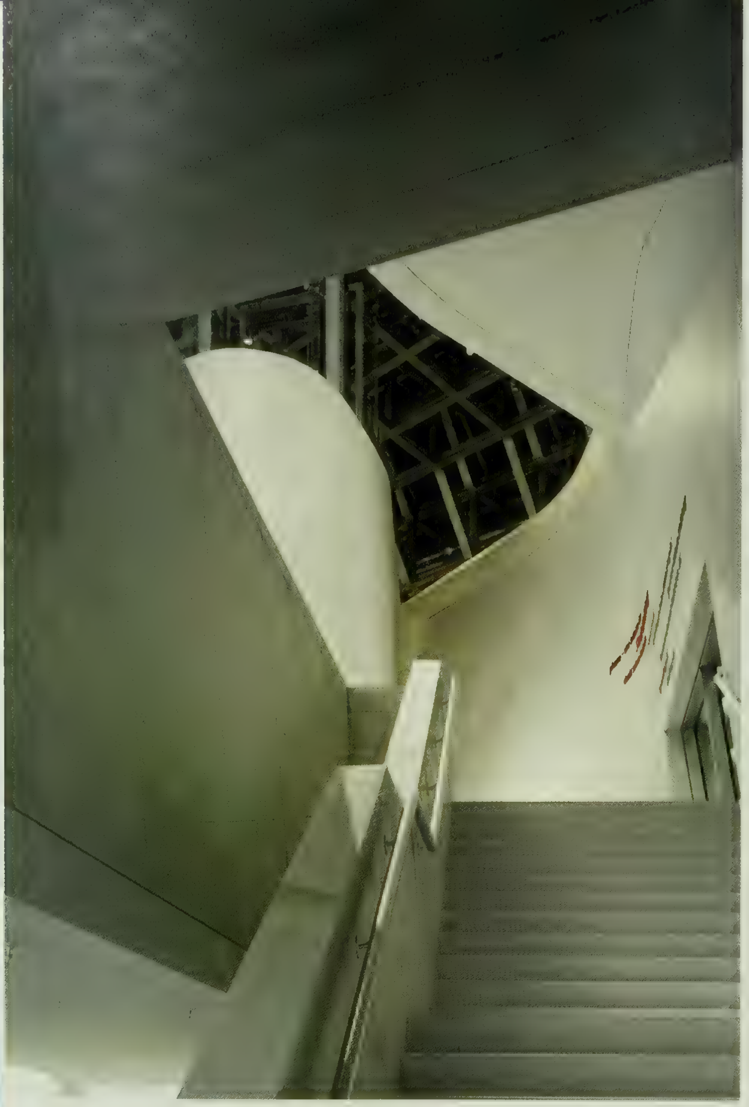
ENTRY LEVEL

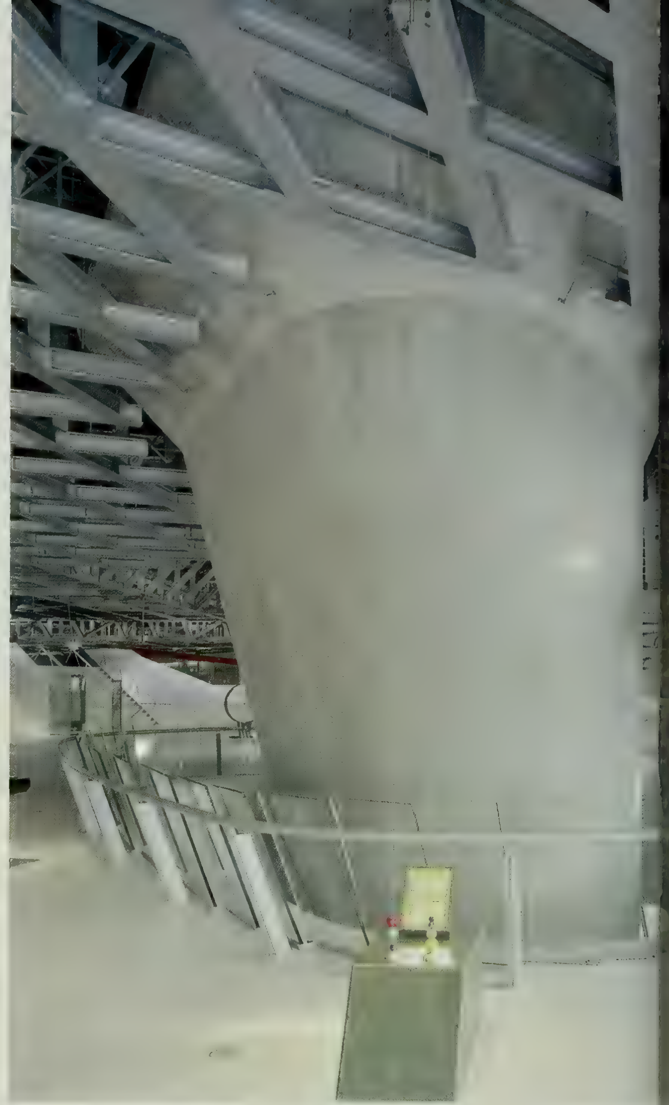
1. *Main entrance*
2. *Group entrance*
3. *Shop*
4. *Kitchen*
5. *Auditorium*
6. *Coffee bar*
7. *Event space*
8. *Staff*
9. *Laboratory*
10. *Ramp to bridge*
11. *Restaurant*
12. *Exhibition*
13. *Bridge to Autostadt*

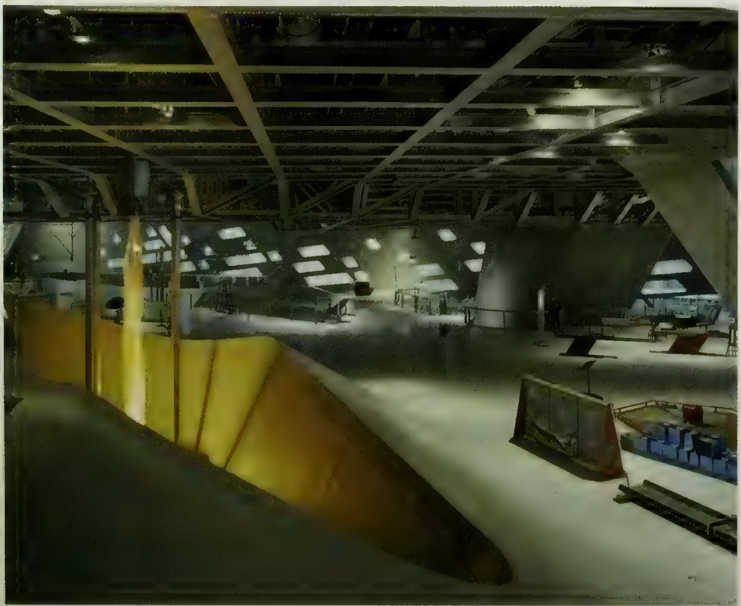
As envisioned in a rendering (below), the cones create an artificial topography aroun and through which visitors walk as they move from one part o the museum to anoth (floor plans, left).



The main entrance hall occupies one of the cones that supports the exhibition floor but does not reach all the way to the roof. The complex geometry of the entry sequence expresses a baroque approach to Modern architecture.







About 250 "experimental stations" occupy the open exhibition space (left). Five of the 10 "cones" support the roof (above right), and some enclose stairs from the entry level to the display floor (above left). Mostly independent of the architecture, the exhibits (opposite, above and below) can be changed over time.

David Lean's Autostadt).

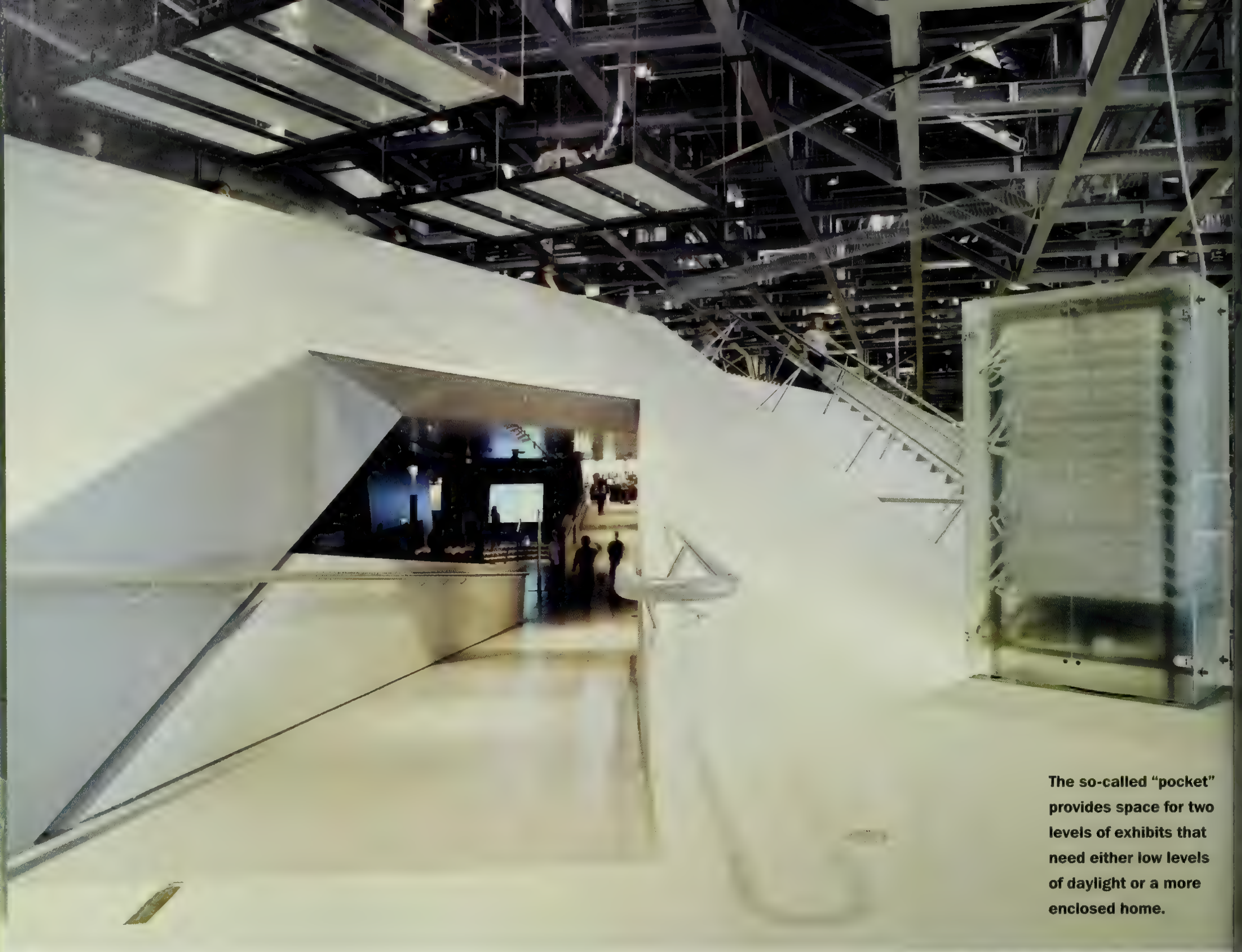
Nestling her building against the can also let Hadid create a grand plaza on the sout side, facing the city. With its rolling groun plane and a track of lights set into the pave ment, the plaza serves as a sweeping front yar that phaeno shares with the city. "The idea wa to create a public terrain," says Hadid.

Her second big gesture was to rais the bulk of the building 23 feet off the groun opening up views through the site, from th city to Autostadt. "I didn't want it to occupy th ground," explains Hadid. Instead, it rests on 1 concrete "cones," curving and canted structur elements of different sizes that seem to war the building where they meet it. By doing this, the architect created large, covered public space under the building, an extension of th undulating outdoor plaza in front. Paved with lightweight concrete, the coated with asphalt, this covered plaza works as an otherworldly "moon scape," says Hadid's project architect Christos Passas. To prevent thi artificial topography from being too dark or dank, the architects sc

omboid-shaped lights into the underside of the building, creating ıat Passas calls a "light carpet."

While all of the cones are structural—five rise the full height of e building to support the roof, and five hold up the main exhibition ıor—they also contain functional spaces, such as the main entrance hall, auditorium, a gift shop, a coffee bar, and a special events room. tructure becomes program," states Hadid. "The idea was to occupy structure." Instead of facing out to the city or Autostadt, the glazed parts of the nes look onto the covered plaza, helping to activate this critical space. 'en so, the notion of creating a large covered plaza in northern Germany, ıere direct sunlight is always welcome, seems questionable. In a place like ong Kong, where Norman Foster tucked a plaza underneath his Hong ıng Shanghai Bank building, such a move makes more sense.

To create the complex geometries of the cones and other curved ıd sharp-edged portions of the building, the engineers specified self-comıcting concrete, which doesn't need to be vibrated. For the flatter sections the street facade, they used enormous (40-by-12-foot) precast panels ith openings punched out for glazing. The roof, which is exposed inside, a nonsymmetrical grid of 4,700 steel elements, each individually cut by ımputer-controlled machinery. Although its distorted geometry and masve scale call too much attention to it, the roof is a fascinating structure that



The so-called "pocket" provides space for two levels of exhibits that need either low levels of daylight or a more enclosed home.

spans nearly 65,000 square feet of exhibition space with no supports other than the five concrete cones that rise the full height of the building.

Inside the building, Hadid created one enormous exhibition space uninterrupted by columns, floor-to-ceiling partitions, or doors. Instead, she sculpted space with sloping walls just a few feet high, with ramps, changes in ceiling height, steps, and a partially enclosed area in the center of the display floor dubbed "the pocket." Traversed by a tunnel-like path and surmounted at one point by a wide stair, the pocket offers darker spaces for exhibits in which daylight would interfere and an upper level for more displays. As she did with the plaza in front of the building, Hadid imagined what she calls an "artificial topography" and then made it real. But this interior landscape works spectacularly well: a fluid, mostly monochromatic environment that offers a rich variety of spatial and sensory experiences for visitors to discover. Hadid's treatment of the gigantic space offers both definition and continuity, creating a multiplicity of places and paths while making it easy for visitors to see where they are going.

The exhibits themselves, which Hadid did not design, have a hard time living up to the quality of the architecture. Organized into nine themes (life, light and sight, movement, wind and weather, micro and macro, energy, matter, information, and games), the 250 "experimental stations" display such things as a fire tornado, sounds made visible, whirlpools, and Pythagoras's theorem. Distributed around the interior li
"particles in a field," the exhibits can be changed piecemeal over time. B
unfortunately, they seem to be disengaged from the architecture.

With its winglike floor plate, faceted elevations, and gracef
curves, phaeno shares many characteristics of Hadid's other motio
inspired projects, such as her BMW building, ski jump in Innsbruch, ar
the National Center of Contemporary Art (a.k.a. MAXXI), now under co
struction in Rome. Its extensive plaza and multiple ways of connecting wi
its setting give it a powerfully urban sensibility. "It's both an object and
field," says Passos. As such, it's an intriguing hybrid that brings together t
enduring notion of architecture as sculpture with a more contempora
search for expressing the dynamic relationships of an information-drive
networked world. A lot of architects these days talk about combining the
two approaches in their work. Zaha Hadid has done it here. ■

Sources

Exterior metal panels: *Huebener & Moews*

Escalators: *Schindler*

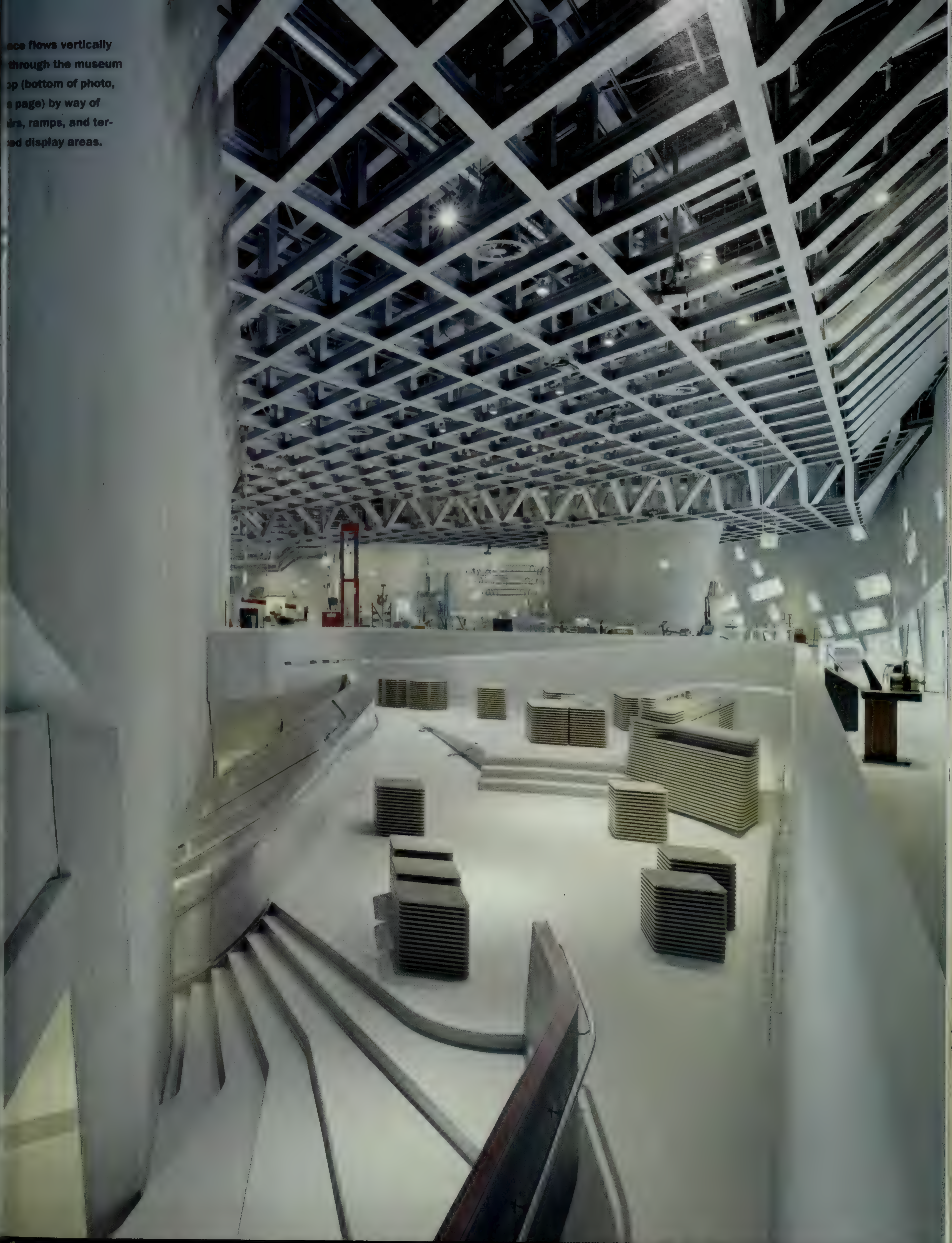
Elevators: *Thyssen*

Metal and glass facades: *Gebr. Gieseler*

Internal glazing: *Dorma Automati*

Cone lighting: *Prolicht*

For more information on this projec
go to Projects at
www.archrecord.com.



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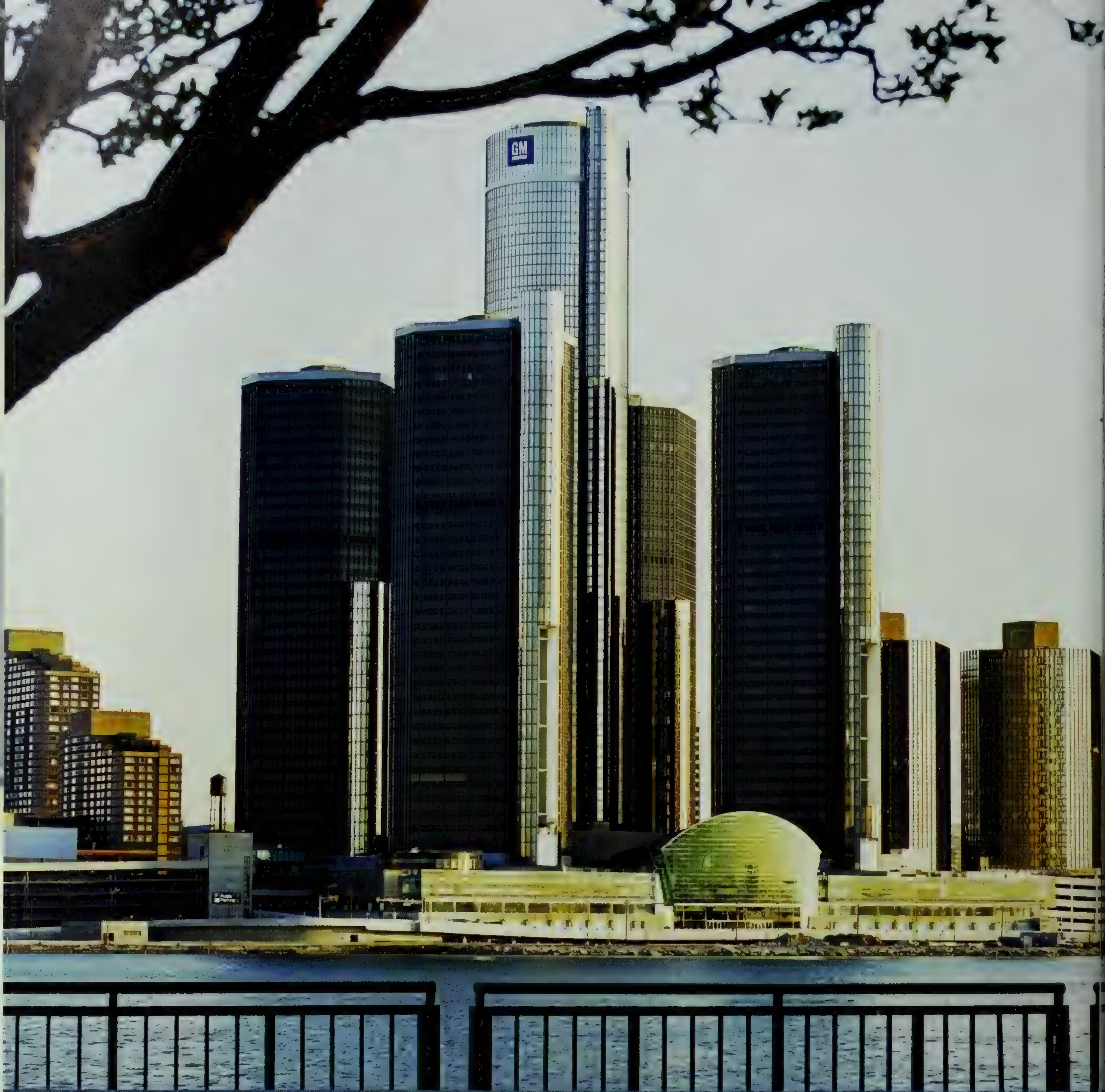
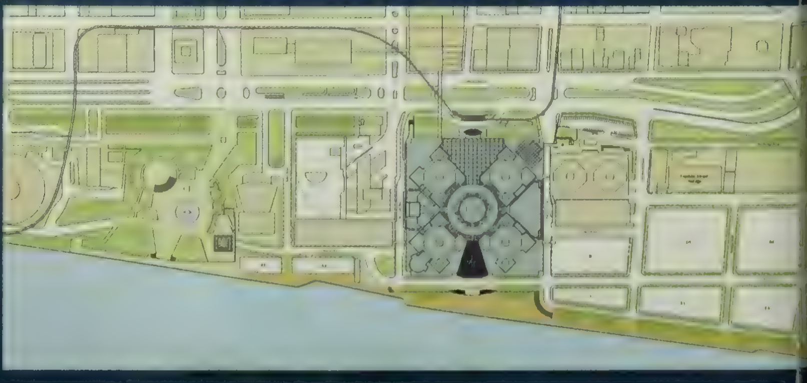


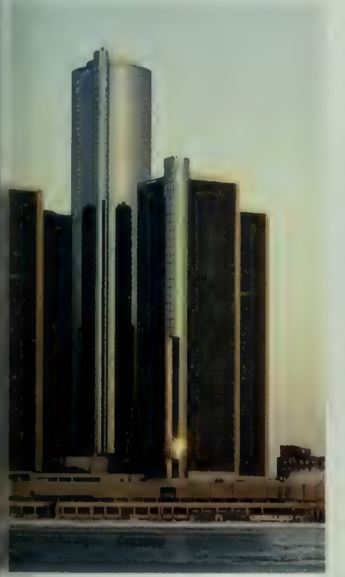
From the Detroit River (above), G.M. Renaissance Center may still look the same as the complex did in 1977 (opposite), but the base has changed. Skidmore, Owings & Merrill in Chicago has removed the elevated south road blocking the buildings from the water, relocated the parking garage, and inserted glass walls at the base. It also carved out a large, five-story Wintergarden overlooking a new, 3-mile-long waterfront promenade, which connects the complex to other development (site plan, right).



ROJECT DIARY SOM's radical renovation in Detroit, the G.M. RENAISSANCE CENTER, raises hopes for John Portman's famous icon of the 1970s

Suzanne Stephens

Age-related maladies account for a lot of renovations after 25 or so years. These only partly explain why Skidmore, Owings & Merrill's Chicago office undertook a radical makeover of John Portman's Renaissance Center (RenCen), which opened in 1977. nically, much of SOM's work on the office, hotel, and retail complex corted serious urbanistic and architectural flaws already recognized when the $337 million complex was brand-new. Bruce Wright, an architect and writer, pointed out these problems in 1978 in *Progressive Architecture*: The mixed-use complex was divorced from the city by its placement on a 14-acre concrete podium between the 10-lane Jefferson Avenue and the Detroit River. Two large concrete berms containing HVAC equipment further blockaded it from Jefferson Avenue and the rest of downtown. Elevated roads girdled the complex on the east, west, and south. Inside, the visitors got lost among a disorienting array of ramps, escalators, and elevators created by a repetitive circular geometry of the poured-in-place ncrete atrium and hotel. Views of the water were obstructed from inside atrium: Only by taking the glass elevator up the outside of the hotel shaft the revolving restaurant could visitors be fully aware of the Detroit River.



These criticisms didn't seem to worry city boosters at the time. wever, by the 1980s, optimism about the ability of this icon of possibiles to revive downtown had palled, and RenCen was no longer hailed as poster child of urban salvation. Portman's project hadn't been able to nch the flow of the middle classes to the suburbs in the 1970s and '80s, ich left an eroded tax base downtown. Meanwhile, the Detroit auto dustry suffered from severe competition from Japan, and layoffs proded at a massive rate. As John Gallagher, an architecture critic, has noted, troit in the 1980s was clearly a "Rust Belt City in decline." Hotels and partment stores began to close, leaving RenCen, which had absorbed ost of the office demand downtown, marooned on the river—an inwardrning fortress with no connection to the real city all around it.

By the time General Motors bought the complex in 1996 and ed SOM/Chicago, headed by consulting design partner Adrian Smith, to dress its problems, Smith's list of ills far exceeded those Wright had detailed. By then, Detroit's people mover skimmed by the complex, but its elevated light-rail lines, installed in 1987 along Jefferson Avenue, obscured the main entrance. The ring office towers, numbered 100 to 400—which G.M. planned to occupy—were not directly connected to each other, and access to the office towers through the shopping mall was hard for business visitors to navigate.

Naturally, age added to the slew of problems. The glass-fiber-reinforced concrete had not weathered well; it was already falling off in places. A 1988 remodeling of the entrance by SmithGroup now looked dated. Between 1996 and 2004, SOM made major alterations to the building, while RenCen continued to operate as a hotel and office complex. "It's like rewiring a 747 while you're flying it," says Matthew Cullen, the general manager of economic development and enterprise services for G.M.

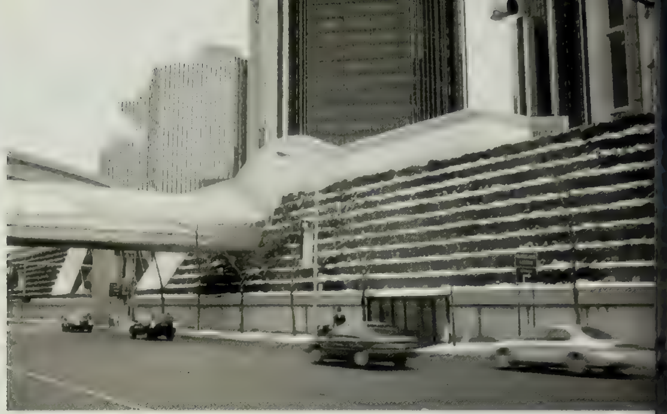
1967–72: Portman's moment in Detroit

The 1967 race riots in Detroit had left city leaders witnessing the white flight to the suburbs, while grappling with the socioeconomic problems for those remaining behind. Meanwhile, in another racially sensitive downtown, the Atlanta Regency Hyatt, designed by architect John Portman (who was also the developer), had opened the same year. The Portman hotel promised a fresh solution to attracting money and people back to Atlanta's decaying downtown. As Jonathan Barnett observed, the hotel's 23-story-high interior atrium through which glass bubble elevators bobbed, "went against all the conventional wisdom of hotel design at the time it was planned" [RECORD, June 1976, page 103], and the media, hotel chains, and urban planners were bowled over. Soon Portman hotels were sprouting up at Chicago's O'Hare Airport, in Los Angeles, San Francisco, New York, and again in Atlanta. Detroit was impressed. In 1971, Henry Ford II; James Roche, G.M. chairman; and other leaders got 51 corporations, including major auto companies, to invest $37.5 million in downtown's rebirth. The Detroit consortium assembled a 32.5-acre site and announced plans for a hotel, office, and retail development, budgeted at $175 million and designed by Portman, to be named Renaissance Center or, as it was fondly called, "RenCen."

1977–78: The extravaganza opens

During construction, costs started mushrooming—even though the U.S.

Project: *G.M. Renaissance Center, Detroit*
Architects: *Skidmore, Owings & Merrill, Chicago—Adrian D. Smith, FAIA, consulting design partner; Richard F. Tomlinson, FAIA, managing partner; Thomas P. Kerwin, AIA, Jonathan Orlove, AIA, project managers; Philip Enquist, FAIA, partner (urban design and planning)*
Engineers: *Skidmore, Owings & Merrill—William F. Baker, partner (structural/civil engineering); Raymond J. Clark, consulting partner (m/e/p and fire protection).*
Interior design: *Skidmore, Owings & Merrill—Jaime Velez, principal*



When Portman's Renaissance Center was completed, two large concrete berms containing HVAC faced Jefferson Avenue, a 10-lane-wide thoroughfare (above), both of which effectively sealed the complex off from the rest of downtown. SOM removed the berms and redesigned the entrance, which had been remodeled by SmithGroup in 1988.

was still recovering from a recession. In 197 RenCen opened: Four 39-story office towe with steel-framed and tinted-glass-an aluminum curtain walls were positioned around 73-story, 1,400-room circular hotel tower, whe reflective glass curtain walls wrapped a poure in-place-concrete central shaft. By 1978, only 2 of its 100 shops were occupied. While 80 perce of 2.2 million square feet of offices was leased o committed, only 40 percent was filled. Still, restaurants and lounges with oval pods we arrayed throughout the center, beginning with revolving platform for a bar surrounded by a lar pond on the lowest lobby level. At the top of th hotel, a three-level restaurant revolved. Yet, on two additional 21-story office towers were built 1981, instead of the six more that were planne

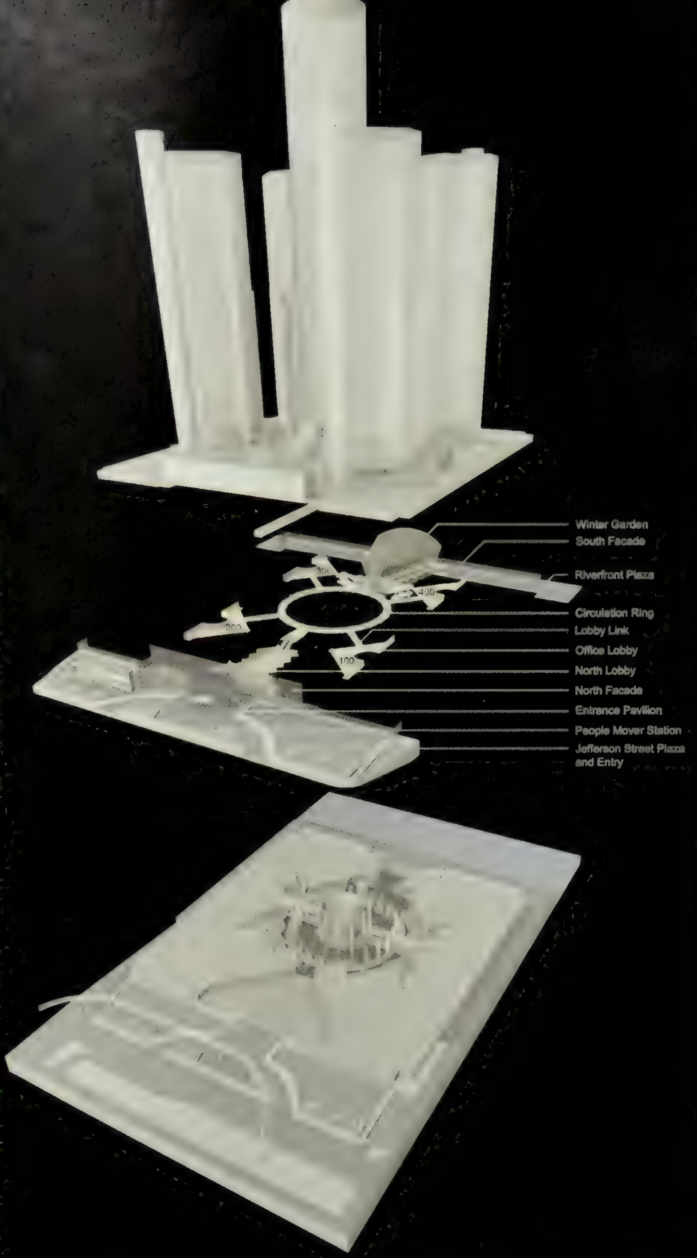
1978–88: Financial woes, and later a makeover

The recession of the 1970s drained Detroit of economic vitality. By 198 RenCen defaulted on its mortgage for the second time, and the four insu ance companies that had bankrolled construction (along with Ford) to over 53 percent ownership. When real estate perked up in the late 1980s, t owners decided to spiff up RenCen, and the leasing managers brought SmithGroup (formerly Smith Hinchman Grylls), an architectural fir founded in Detroit in 1853. SmithGroup designed a new, two-story entran lobby on Jefferson Avenue to make it easier for people to find the front doo introducing then-au-courant gestures of corporate Postmodernism, such an entry arch and polished granite facing the drab base. The firm als located all retail spaces on the first level, giving each a distinct design identi and linking them with a "yellow brick road" of porcelain tiles.

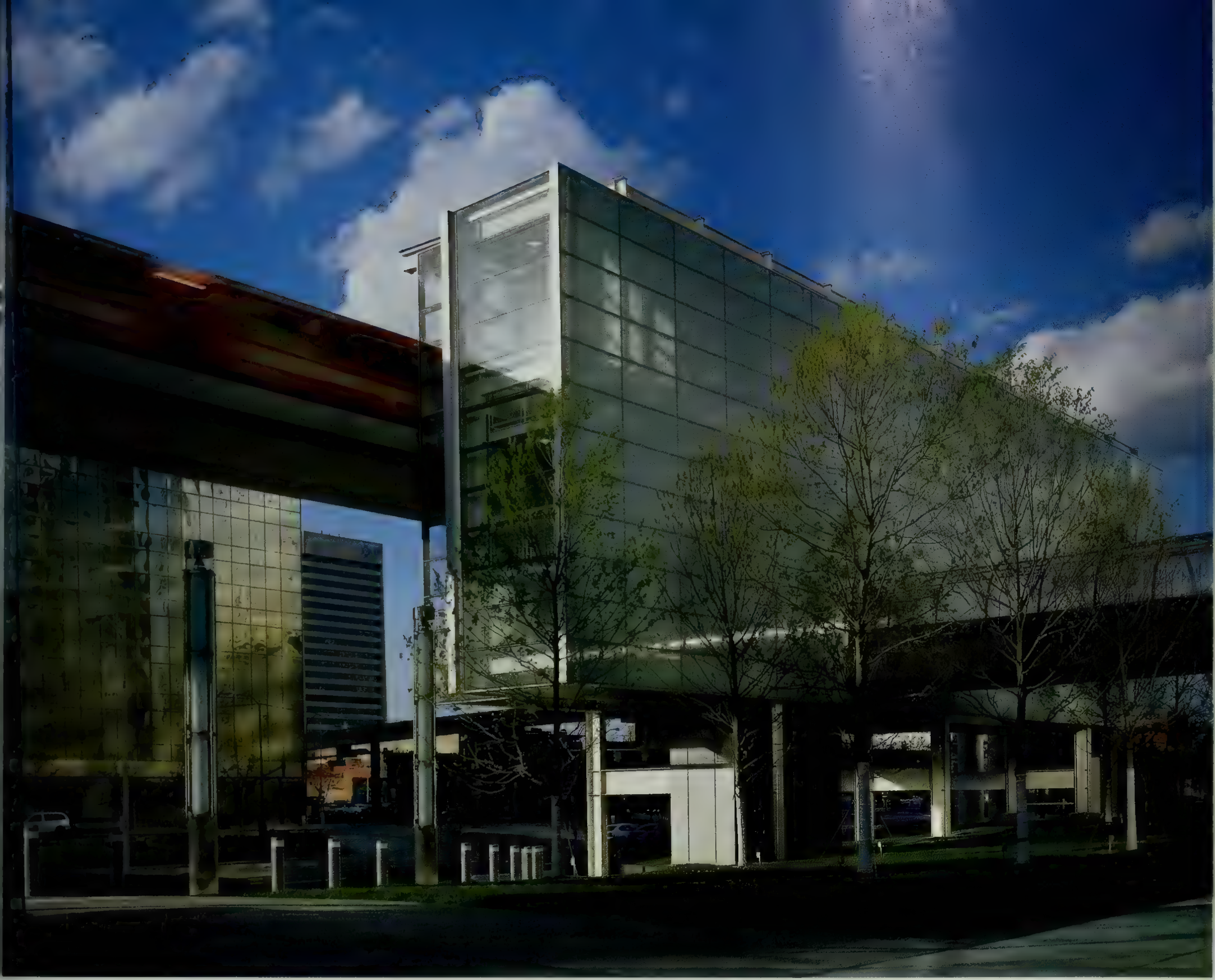
1996–2000: G.M. takes over

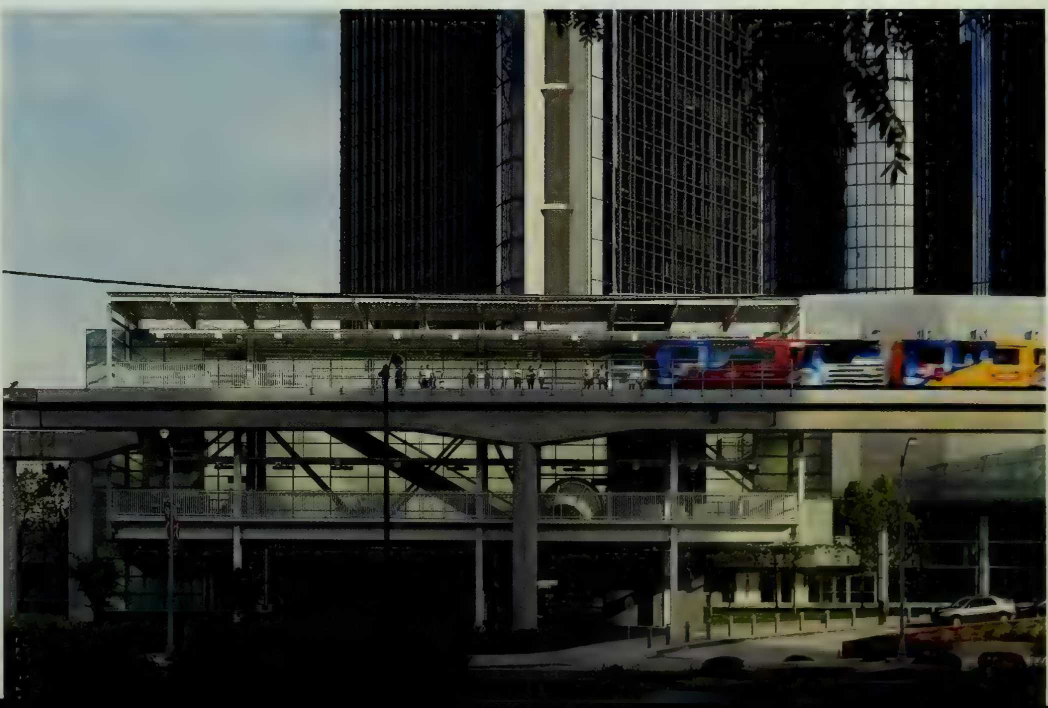
In 1996, General Motors bought the core five-tower complex of RenCe one third of which was empty, to use as its world headquarters. Considerin G.M. paid $75 million for the $337 million complex, this was a good de except that renovations would cost the company $500 million. G.M. st considers it cost-efficient, as the move consolidated a number of G.M offices downtown. It meant leaving the elegant New Center headquarte located 5 miles north of downtown in a 1.3-million-square-foot buildi designed for G.M. by Albert Kahn in 1922. Initially, G.M. announced 7,0 employees would be housed here; currently, there are about 5,000.

After an RFP process, G.M. hired SOM's Chicago office as t master planners and architects for the renovation, with Adrian Smith as le designer. Through another selection process in 1997, G.M. commission Gensler to design the office interiors. In March of this year, G.M. delayed t

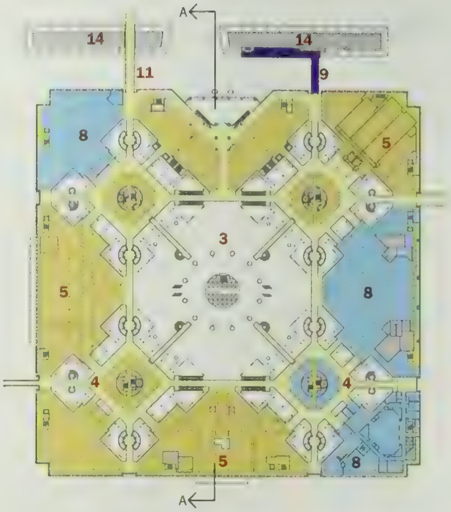


An exploded computer modeling (above) of SOM's renovation of RenCen shows the relationship between the new elements, such as the Wintergarden, the circulation ring, and the entrance pavilion facing Jefferson Avenue. In 1977 (right), the entrance was hard to see from the road.

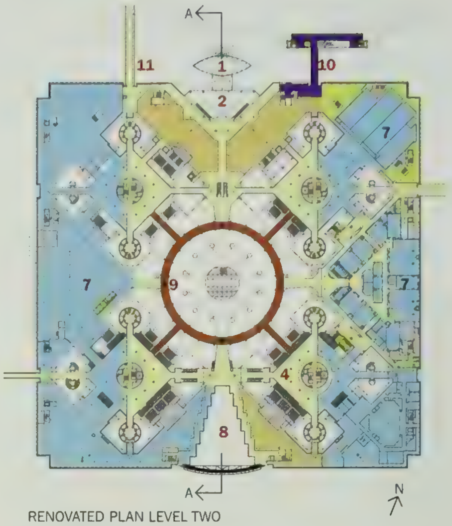




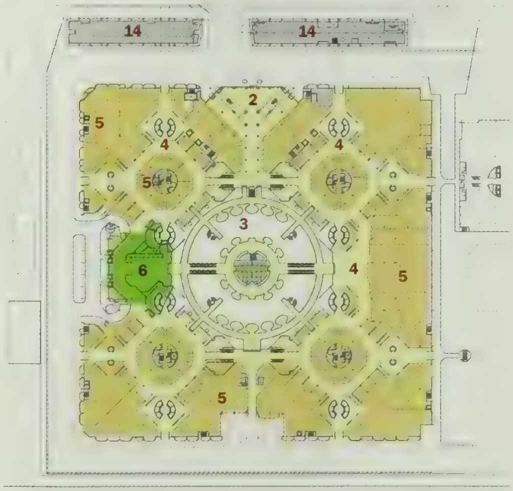
1987, a people mover
is built with an ele-
ted track along
fferson Avenue (right).
order to open up the
enue side more to
e city, SOM removed
rms and redesigned
d repositioned the
ople-mover station
the east. In 2005,
M's new station
ened (above), a
ctilinear, three-story
eel structure with
sted-glass walls.
e station connects
a a pedestrian bridge
the mezzanine level
RenCen's lobby.



EXISTING PLAN LEVEL TWO



RENOVATED PLAN LEVEL TWO



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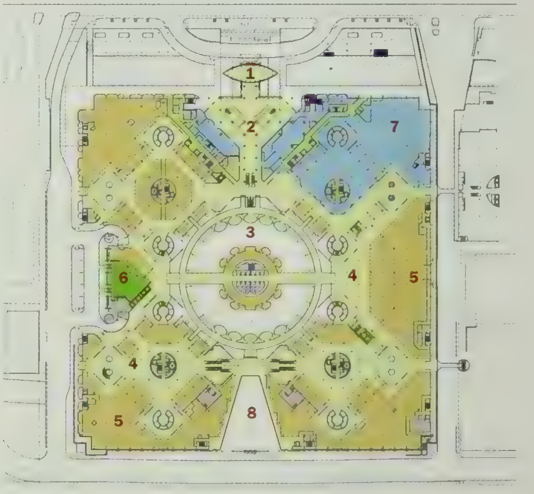

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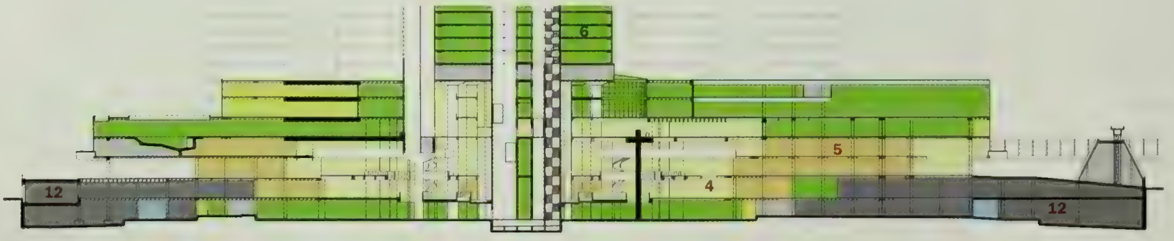
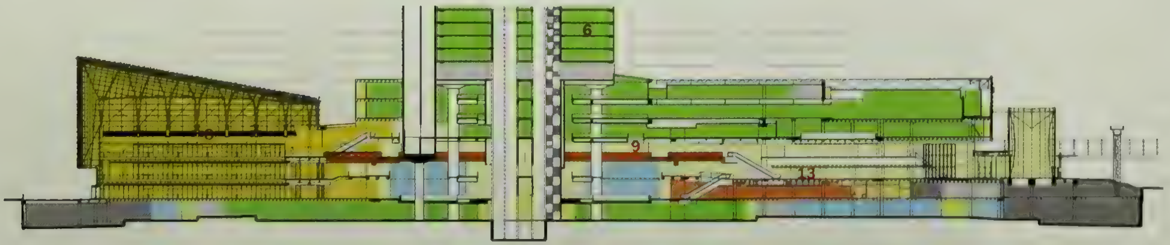
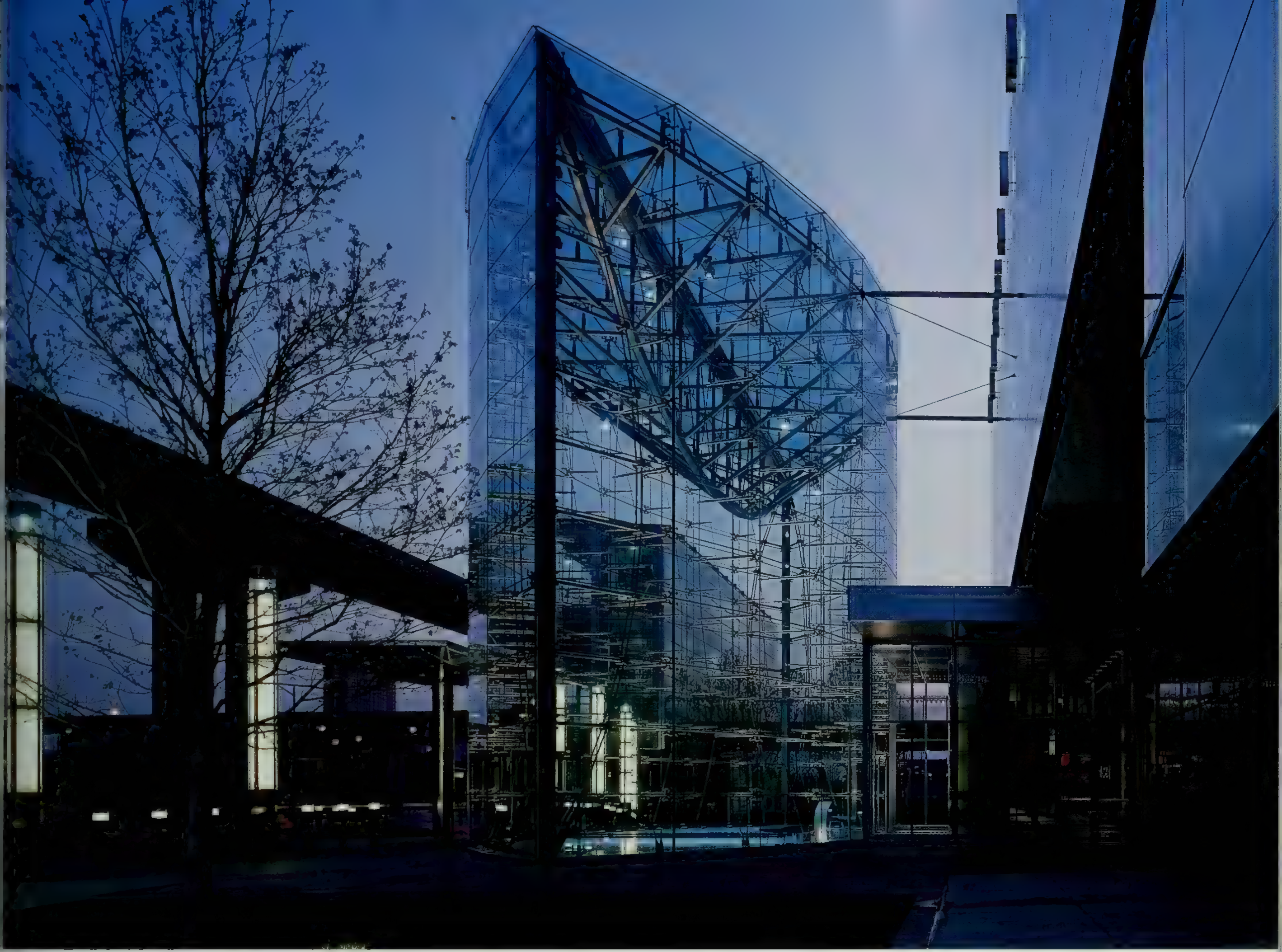


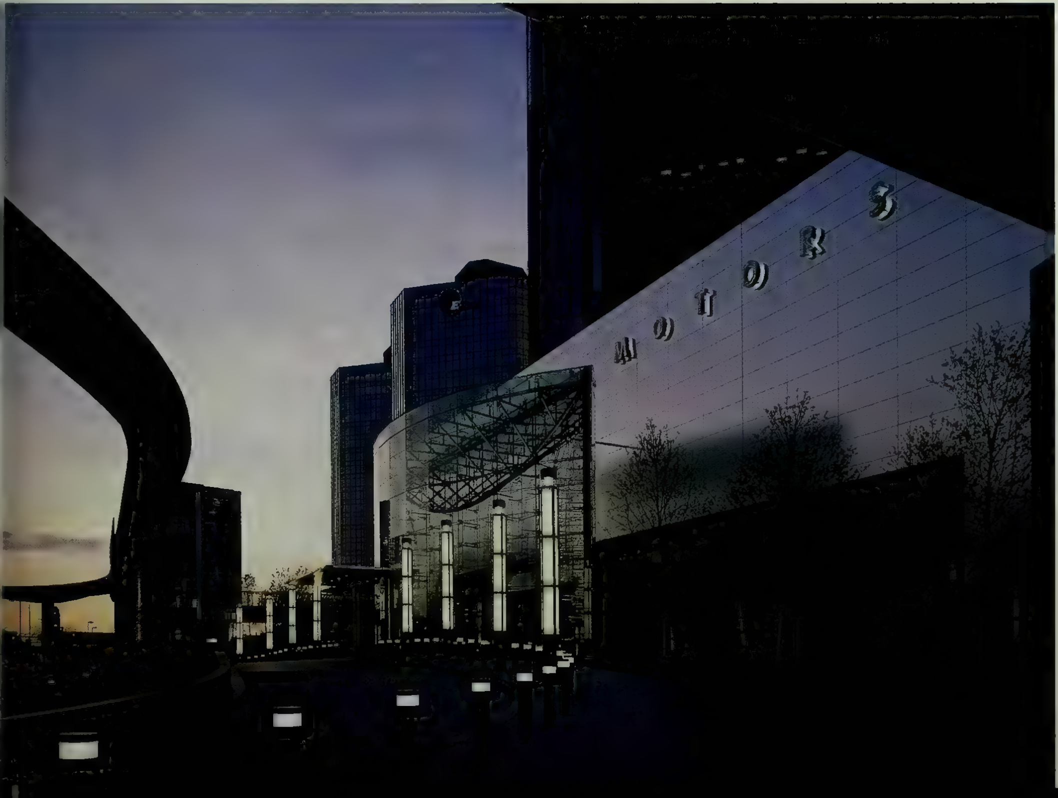
EXISTING SECTION A-A



RENOVATED SECTION A-A

1. *Entrance pavilion*
2. *Lobby*
3. *Atrium*
4. *Circulation*
5. *Retail*
6. *Hotel*
7. *General Motors*
8. *Wintergarden (belo*
9. *Glass circulation rin*
10. *People-mover statio*
11. *Pedestrian bridge to Millender Center*
12. *Parking/loading*
13. *Food court*
14. *Berms (removed)*





In order to further define the entrance to G.M. Renaissance Center along Jefferson Avenue, SOM designed an oval glass pavilion, 30 feet high, 30 feet wide at the center, and 96 feet long (above and left). The architects added the lampposts (left) and sandblasted the polished granite from the 1988 remodeling, overlaying the panels with a delicate grid of stainless-steel strips.

The five-story Wintergarden (left), which overlooks the river, provides a much-needed orienting device for visitors. A glass skylight supported on bowed trusses admits light to the large hall, and Eucalyptus wood clads the parapets. G.M. has installed an exhibition space (below left) on the lowest level of the atrium.

start of the project until the city decided whethe to locate three casino-hotel complexes nearb "We were not thrilled, but deferred to the city G.M.'s Cullen now says about the casinos' poten tial proximity. Ultimately, the casino hotels wer placed elsewhere, and in June, the south roac known as Atwater Street, was demolished.

In May 1998, SOM's design for a $ million glass walkway got under way. The lum nous floor of the 10-foot-wide ring on th second level of the center (see plan, page 86, to right) is formed of laminated tempered glass wit an acid-etched surface. Bridges lead off the ring t each of the four office towers, as well as to th Wintergarden, G.M. University (a new 30,00 square-foot training center), and the main lobb Lighted from below, the floor and its balustrade of clear glass with cherr handrails compete sportingly with the rather gloomy concrete interior.

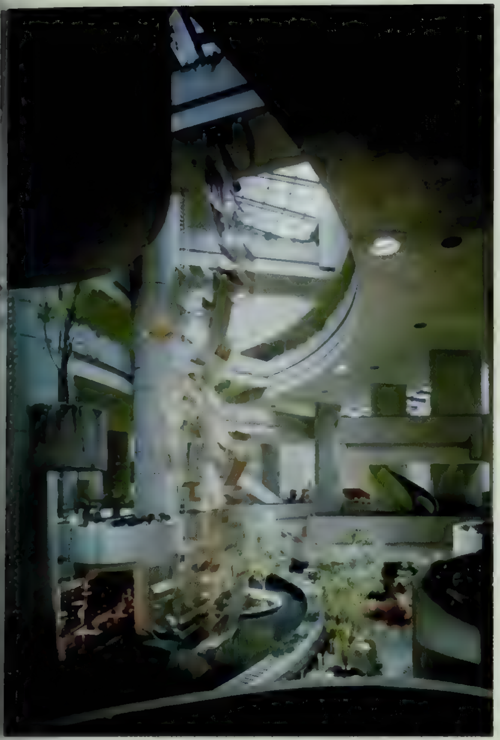
In March 1999, construction began on the south-facin Wintergarden, a five-story, fan-shaped space created by cutting throug three concrete floor plates down to the "A" level, on grade with the Detro River. Views of the water now open up through a large bowed window wa and arcing glass skylight. The ample space—surrounded by shops, an including a café—which can be transformed quickly into a party hall is fille with "preserved" (maintenance-free) Washingtonia palm trees. The glass roc is supported by bowed trusses, while ocher paint and Eucalyptus claddin add warm tones to the interior spaces on gray days.

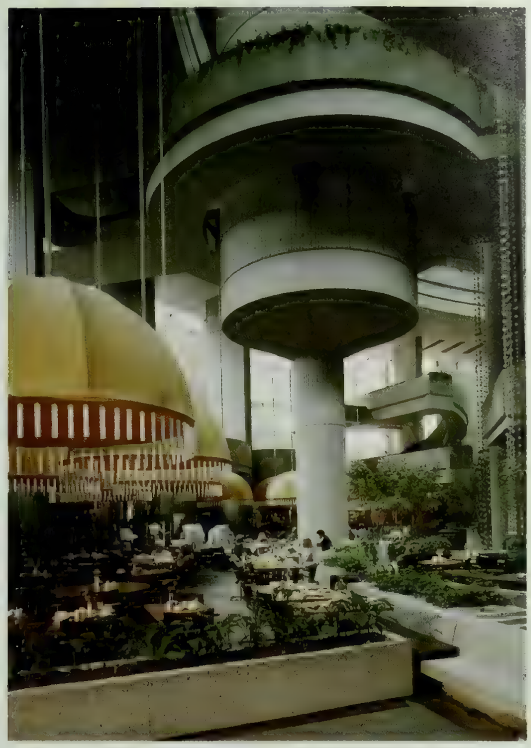
2000–02: G.M. expands its world, makes public improvements

In 2000, G.M. World, a 50,000-square-foot showroom for the latest car mod els, made its debut on the first level. The company also arranged fo Marriott to manage the hotel, with G.M. owning two thirds and Marriott th rest. G.M. agreed to ante up $125 million for renovation costs. The compan took on other real estate ventures nearby, making public its plans to lease 2 acres it owned east of RenCen to a residential developer for high-rise cond and rental apartment towers called River East. (As of press time, G.M. wa poised to announce the developer for the project.) At the end of 2001, G.M assumed the entire lease for the last two of the seven RenCen towers (num bers 500 and 600), with the idea of renting out the 570,000 square feet c office space and 50,000 square feet of common area to other companie G.M. also bought the hotel, parking, and retail spaces (but not its condos) i the Millender Center, just across Jefferson Avenue. In 2002, a 3-mile, $6. million riverfront promenade, called Riverwalk, opened in front of RenCe On the Jefferson Avenue side, two large concrete berms were finally remove for the new entrance, with plans to move the people-mover station, whic had been hooked into one of the berms, to the east.

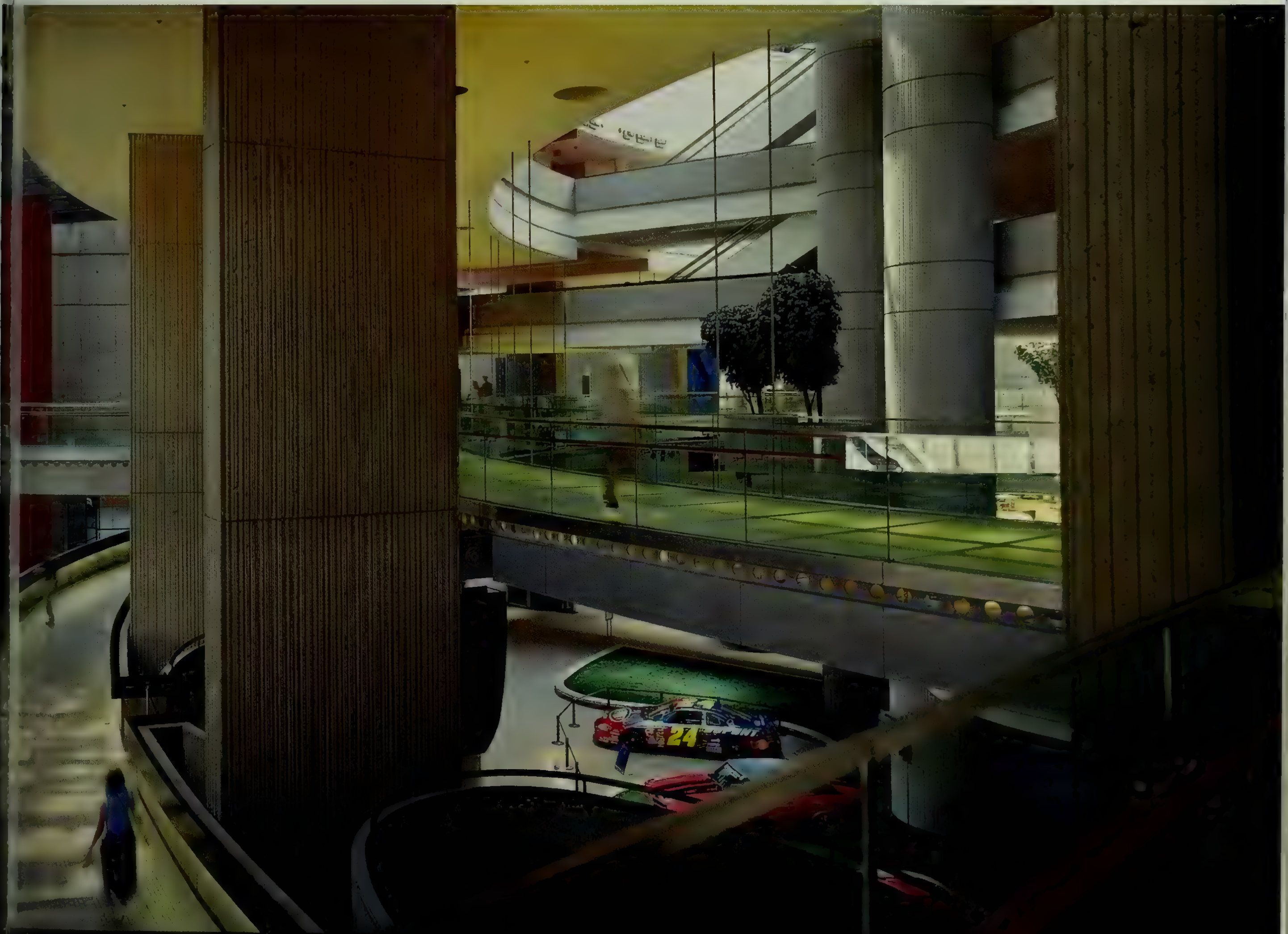
2004: Entrance and lobby in place

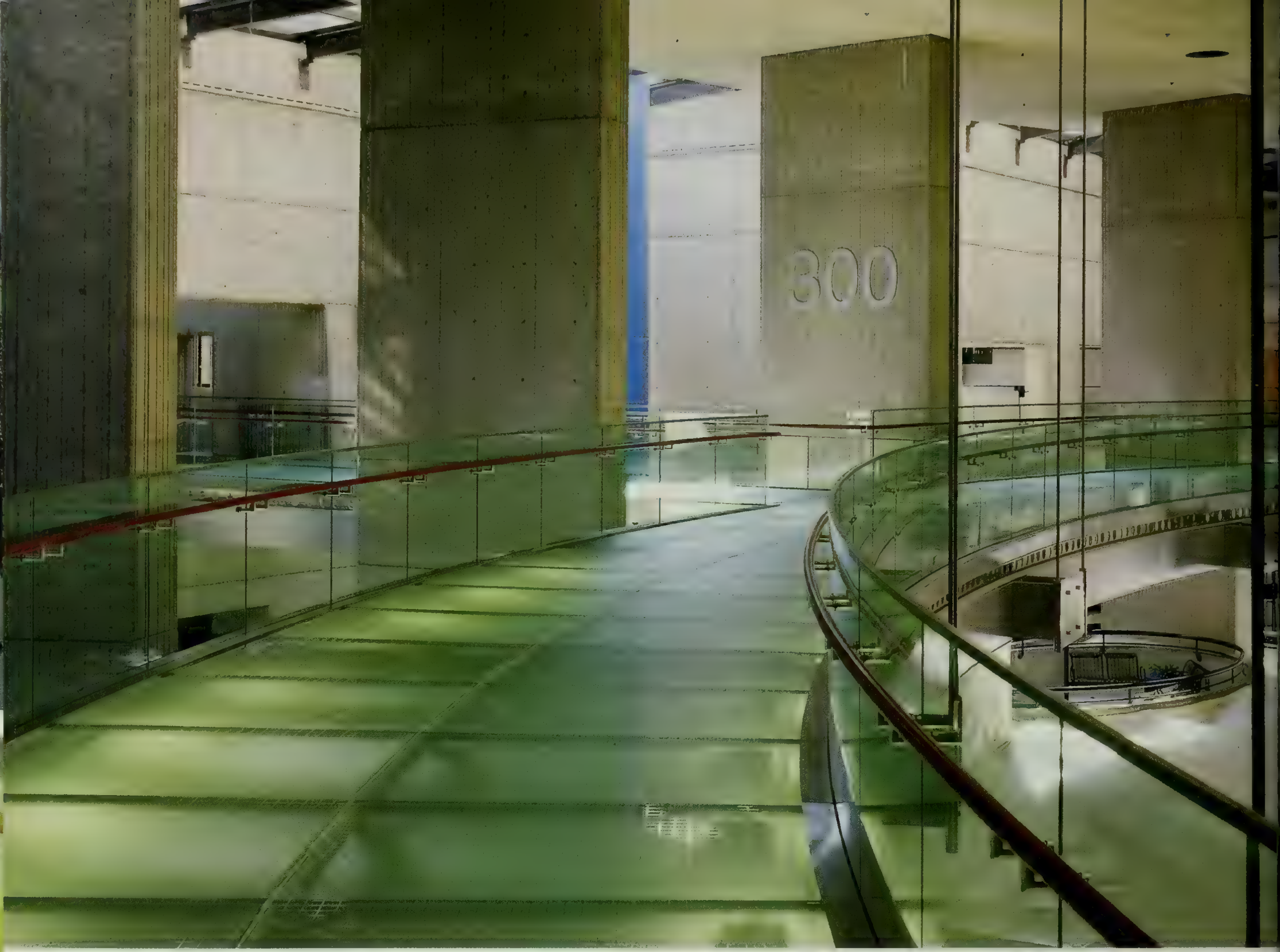
A new, 30-foot-high, 30-foot-wide, 96-foot-long entrance pavilion wa erected with single-pane glass walls in 2004. The glass roof of the oval free standing structure, carried on a bowed truss, is supported by tw stainless-steel columns, while vertical double-cable trusses lock the curve glass walls in place. Also completed that year was the new lobby, a two-leve space that can be entered behind the transparent pavilion or via mezzanine level bridges that connect on one side to the people-mover station and o the other to a pedestrian bridge over Jefferson Avenue to the Millende Center. SOM's Smith worked with British artist Danny Lane to create tw undulating green-glass walls, 4 inches thick and 26 feet high, that extend 4 feet on both sides of the lobby and shield activities on the mezzanine level





When the Renaissance Center first opened in 1977 (left two), thirteen restaurants and cafés were sprinkled throughout the cavernous space. Today (below), fewer cafés, restaurants, and fast-food places are located in the atrium proper. The recent renovations left ample amounts of poured concrete exposed in the atrium (below), now darker with age.





A glass circulation ring (above) on the second level now links the four office towers. The steel ring is suspended by cables 20 feet on center, which in turn are fastened to the concrete columns.

The sinuous sculpture, formed of some 2,000 clear, polished-glass pieces, sits on a concrete curb beam and is laterally braced by bookends of stainless-steel members. Steel trusses cantilevered from the mezzanine support the walls at mid-level. To guide visitors proceeding from the entrance lobby to the interior, SOM created a central aisle, edged by a series of staggered Eucalyptus wood panels that connect in turn to glazed storefronts (G.M. says they will be used as a media center). Non-SOM additions included two restaurants that opened in the lower levels that year, plus another on the top two floors (that doesn't revolve). Also by 2004, Riverfront Shops, with 235,000 square feet, occupied two levels around the Wintergarden.

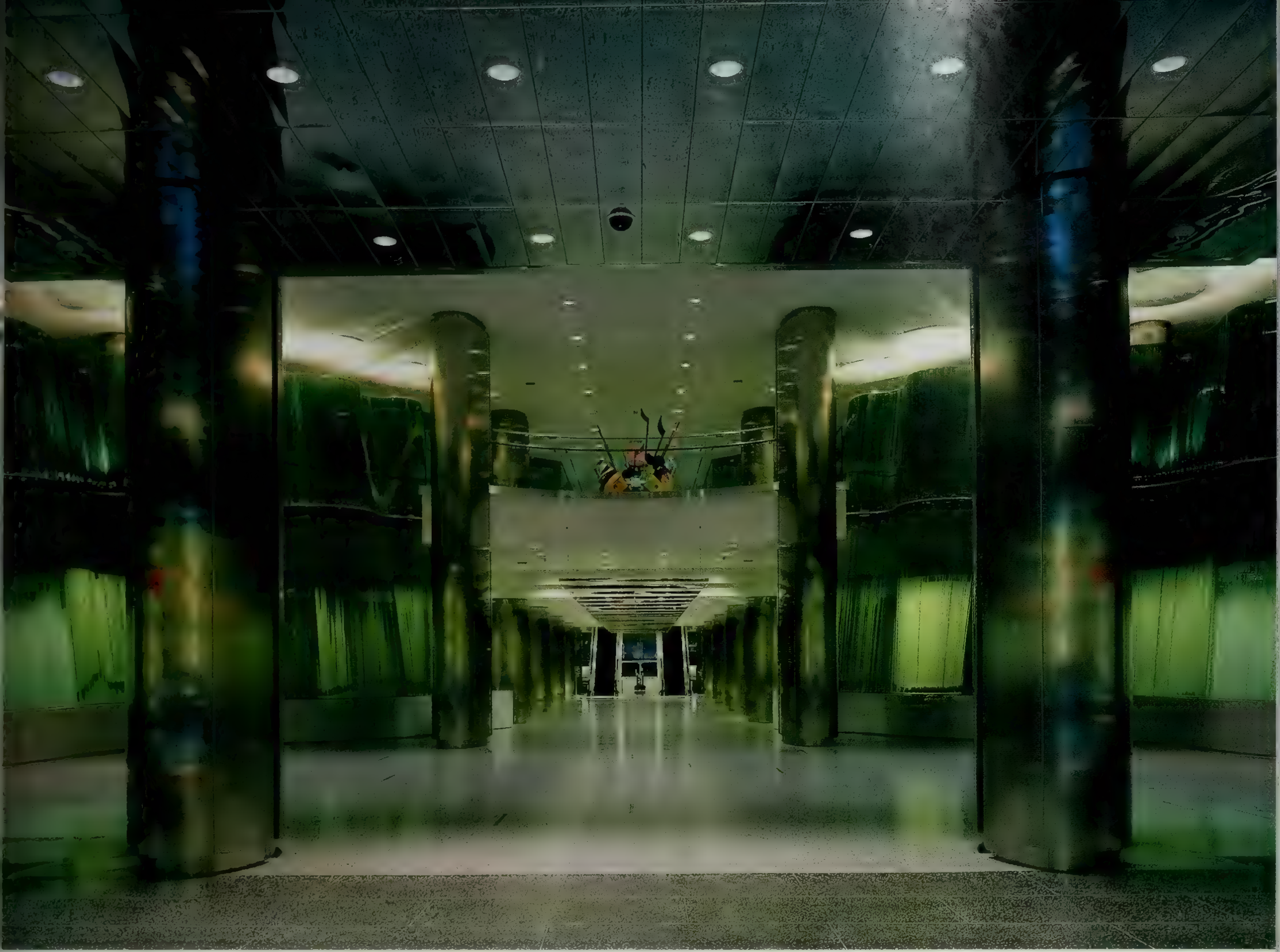
2005: Rocky times for G.M.

Ironically, a new, three-story, glass-and-steel station for the mass-transit people mover, connected via a bridge to RenCen's lobby mezzanine, would open during the year that G.M. (and the U.S. automotive industry) started tanking. In 2005, G.M.'s shares sank and the company cut back on matching retirement funds and pay raises. By the summer, G.M. announced the closing of assembly plants in Baltimore; Linden, New Jersey; and Lansing, Michigan. Standard & Poor's revised its rating on G.M. stock from stable to negative, and in December, one of its analysts surmised that G.M. might
have to declare bankruptcy in the near future to lower pension and lab
costs. The same month, mega-investor Kirk Kerkorian gave everyone the j
ters by cutting his stake in G.M. from 9.9 percent to 7.8 percent, whi
indicating he wanted a seat on G.M.'s board.

2006: Signs of life (for Detroit and RenCen)

During the North American International Auto Show in Detroit
January 2006, smaller cars and hybrid cars, particularly those from fo
eign manufacturers, including the indomitable Toyota, were getti
publicity—yet G.M. remains upbeat about its products. As for RenCe
G.M.'s Cullen says the shops are 70 percent occupied (although at the e
of 2005, this observer noticed lots of empty storefronts). Cullen is high
the effect of RenCen on the local economy. "Downtown Detroit is doi
terrifically better," he says. "The city had been in economic free fall, but
helped foster development through this renovation." Because of oth
recent projects built downtown—which include two stadiums, a ne
Compuware building, and the three casinos—Detroit leaders are sayi
the turnaround has finally occurred, and the city will attract touris
residents, and business.

As this issue goes to press, the Super Bowl is being held at Fo
Field, which opened in 2002. For the event, RenCen is hosting t
National Football League and is acting as the center for the media, wi
ESPN even broadcasting out of the Wintergarden. "This place will
fun," says Cullen. (Sorry to miss it …)



In the new lobby (above), SOM wrapped concrete columns in stainless steel and installed a wavy glass sculpture. Eucalyptus wood panels (left) edge the central entry path.

Lessons learned

Who knows the future of RenCen's renovation and G.M.'s involvement? Nevertheless, the drastic changes have definitely improved the building and its linkage to the city. (It's too bad the speedy approval process in 1972 ignored the obvious flaws that finally were addressed.) SOM's interventions—such as the entrance pavilion, the lobby, the glass circulation ring, and the Cesar Pelli-ish Wintergarden—do make RenCen noticeably more welcoming, if a bit eclectic stylistically. Yet the ungainly exterior walls of the complex and (now dingy) interior concrete remain, along with the irksomeness of not being able to cross the atrium space in a straight line. The basic DNA is the same, and you still feel as if you are wandering through a Piranesian parking garage. Perhaps another $500 million could fix that. ■

Sources

Stainless-steel structure for Wintergarden, circulation ring, and entrance pavilion: *MERO Structures*

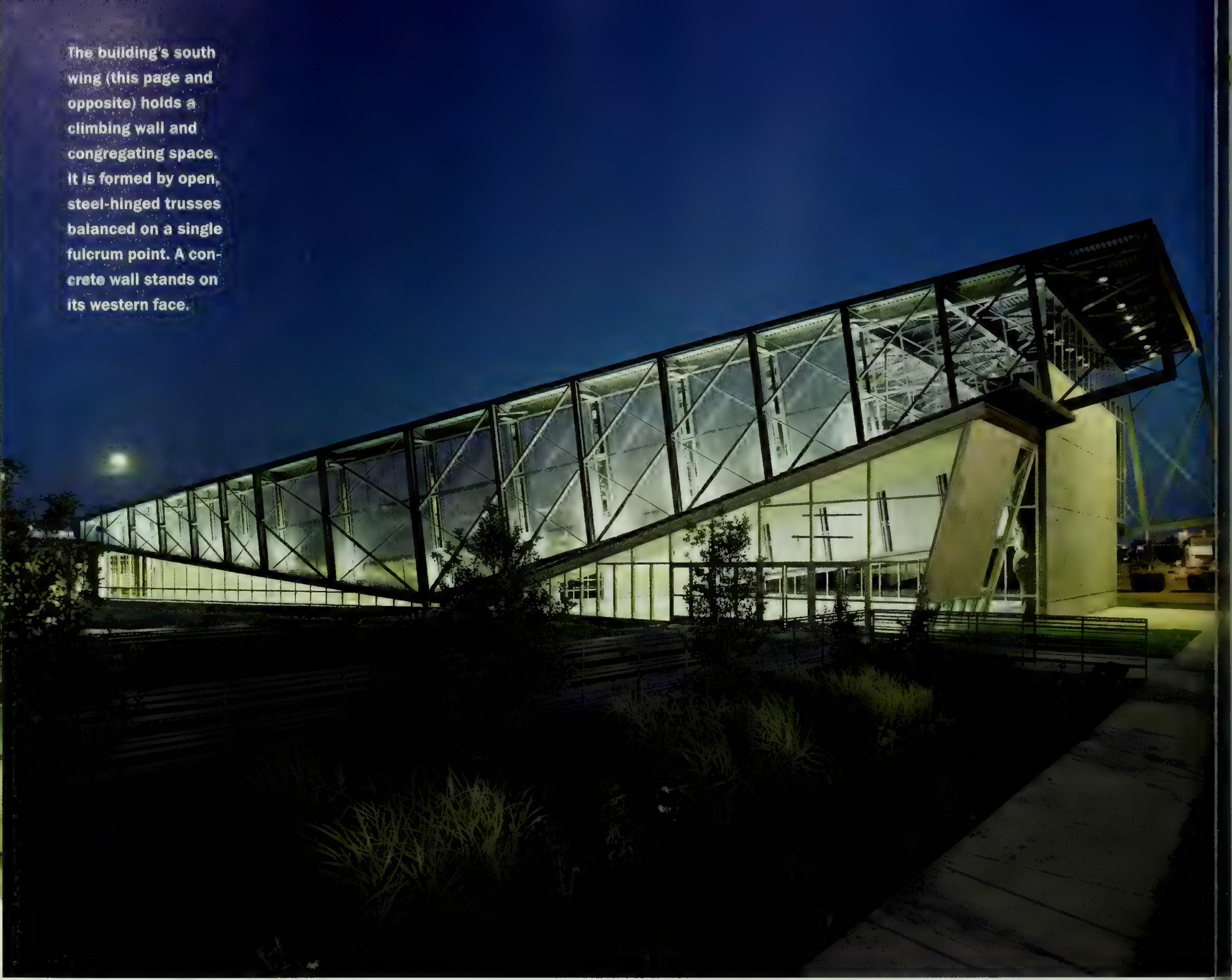
Glass for circulation ring: *FiglaUSA*

Eucalyptus facing: *Bacon Veneer (Wintergarden); Dooge Veneer (north lobby)*

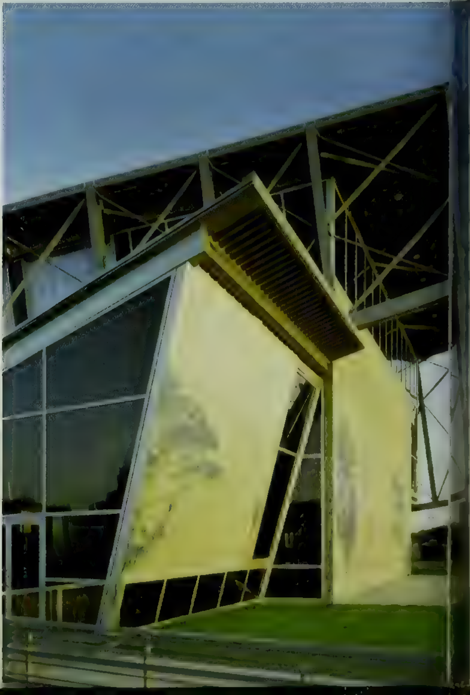
Glass railings: *Soheil Mosun*

Granite pavers: *Cleveland Marble Mosaic Company*

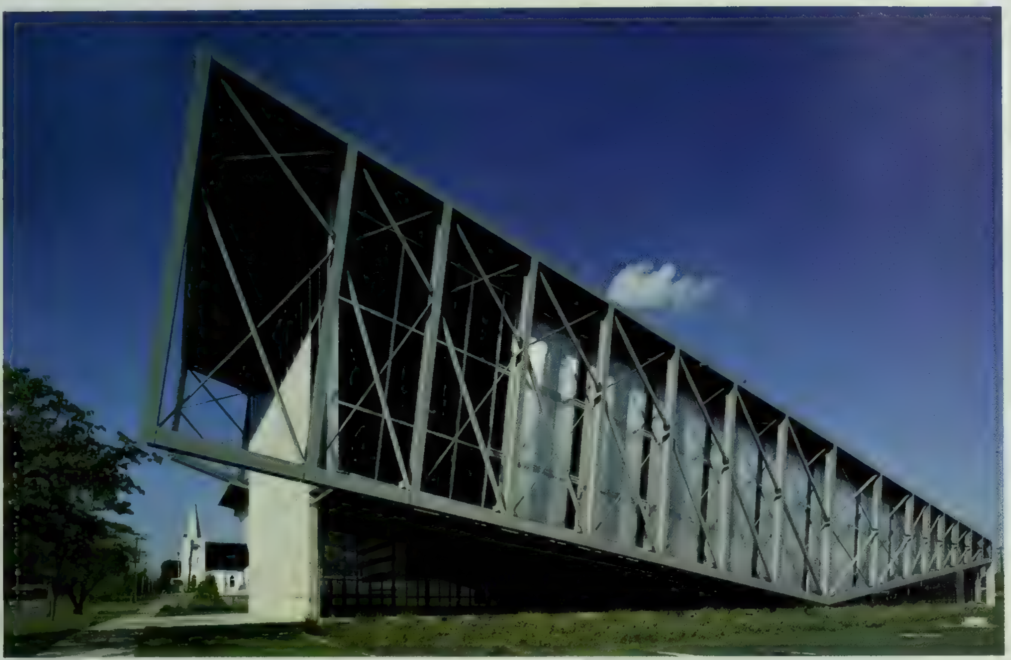
For more information on this project, go to Projects at **www.archrecord.com**.



The building's south wing (this page and opposite) holds a climbing wall and congregating space. It is formed by open, steel-hinged trusses balanced on a single fulcrum point. A concrete wall stands on its western face.



uildingstudio designs a modern community space, BRIDGES CENTER, that helps mend social divides in Memphis



James Roper

The new headquarters for BRIDGES, a Memphis-based nonprofit that helps promote local community and racial cohesion, could have been just another “big-box building” sitting next to its parking lot. After all, to accommodate the client’s request for 120 rking spaces for staff and guests meant that more than half the building e in downtown Memphis would have to be covered with asphalt.

But the design team, from Memphis’s buildingstudio, avoided ch a “conventional suburban solution” by putting the parking lot on the of, with an inclined parking ramp helping to give the building its form, ys principal Coleman Coker. Such innovative design schemes, it turns out, e commonplace in this remarkably dynamic, yet still contextual building.

The client, BRIDGES, traces its history of youth advocacy back ore than 80 years to a program started by the Episcopal church. One of its ost important goals is to bring together high school students, both white d African-American, for a variety of activities to encourage understand- g and cooperation between the races. BRIDGES also helps teach dividuals how to take responsibility for their actions, face challenges with nfidence, and work toward common goals for the community.

The 2.7-acre site, located in the city’s oldest neighborhood, Greenlaw, has about 325 feet fronting each surrounding street. As with many urban neighborhoods, the area had gone into decline but has lately begun to experience a rebirth. BRIDGES deliberately chose the site for its headquarters as a sign of its commitment to the inner city.

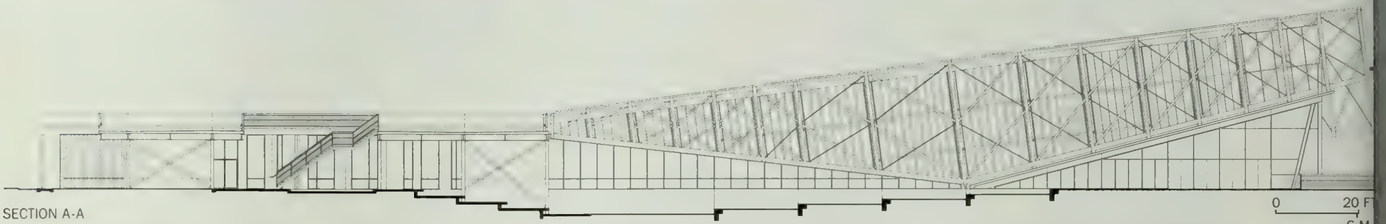
James R. Boyd, president of BRIDGES, says the group gave the architects a list of its aims for the building, including a focus on both local children and the neighborhood. The building also had to respect the environment and have flexible spaces, which could be used for many purposes. Not least, Coker points out, the 53,000-square-foot project had to be distinctive.

The new headquarters, which takes up an entire city block, is composed of two wings organized around a wedge-shaped open plaza that extends the length of the property. An open breezeway, framed by a bridge connecting the parking decks on top of the two wings, separates a

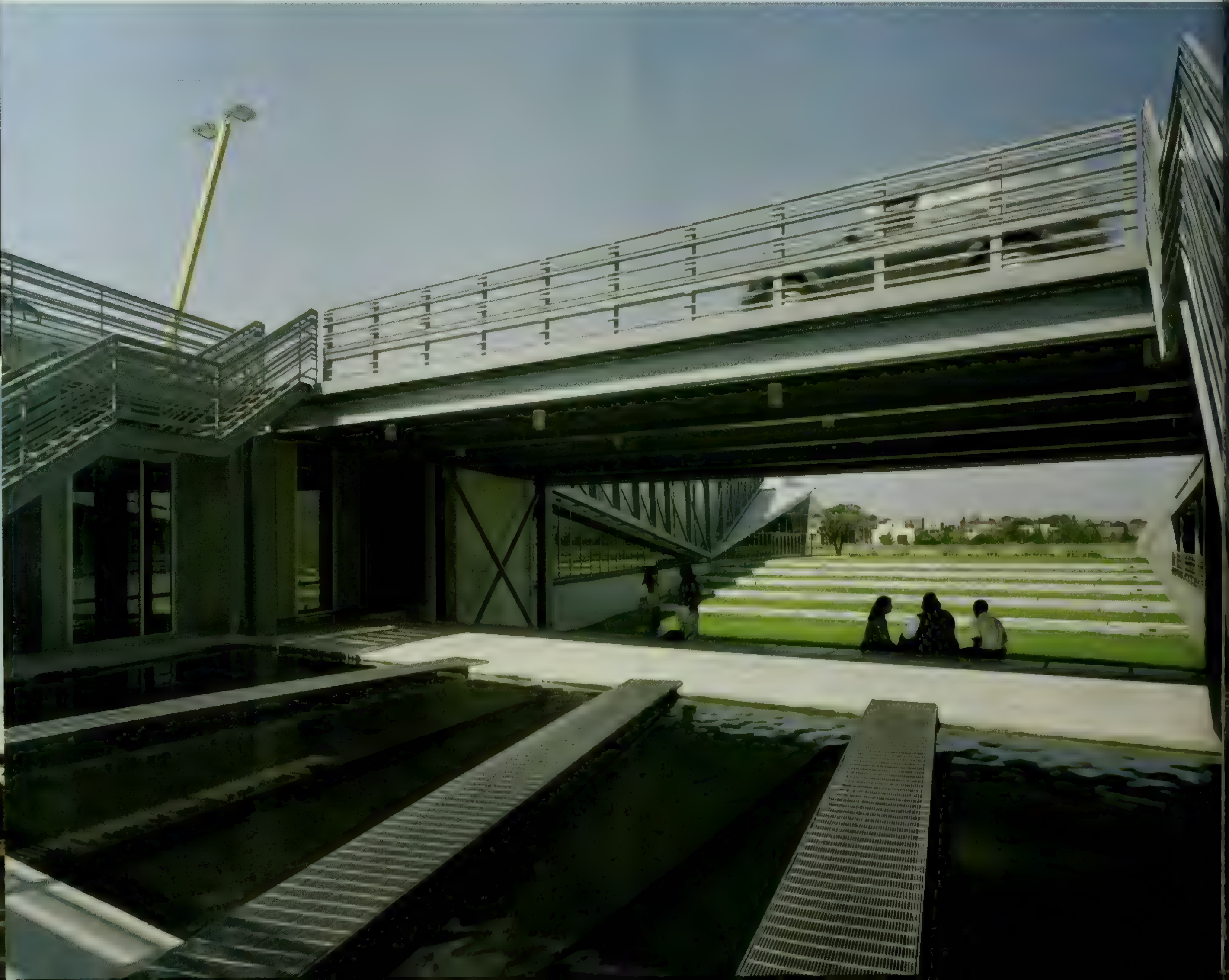
Project: *Bridges Center, Memphis*
Architect: *buildingstudio—Coleman Coker, Jonathan Tate, David Dieckhoff, Christopher Schmidt, Anastasia Laurenzi, Carl Batton Kennon, Collette Reid*
Engineer: *Guy Nordenson and Associates (structural); Arup, New York (m/e/p, fp); ETI Corporation (civil, and landscape architect)*
General contractor: *Jameson Gibson Construction*

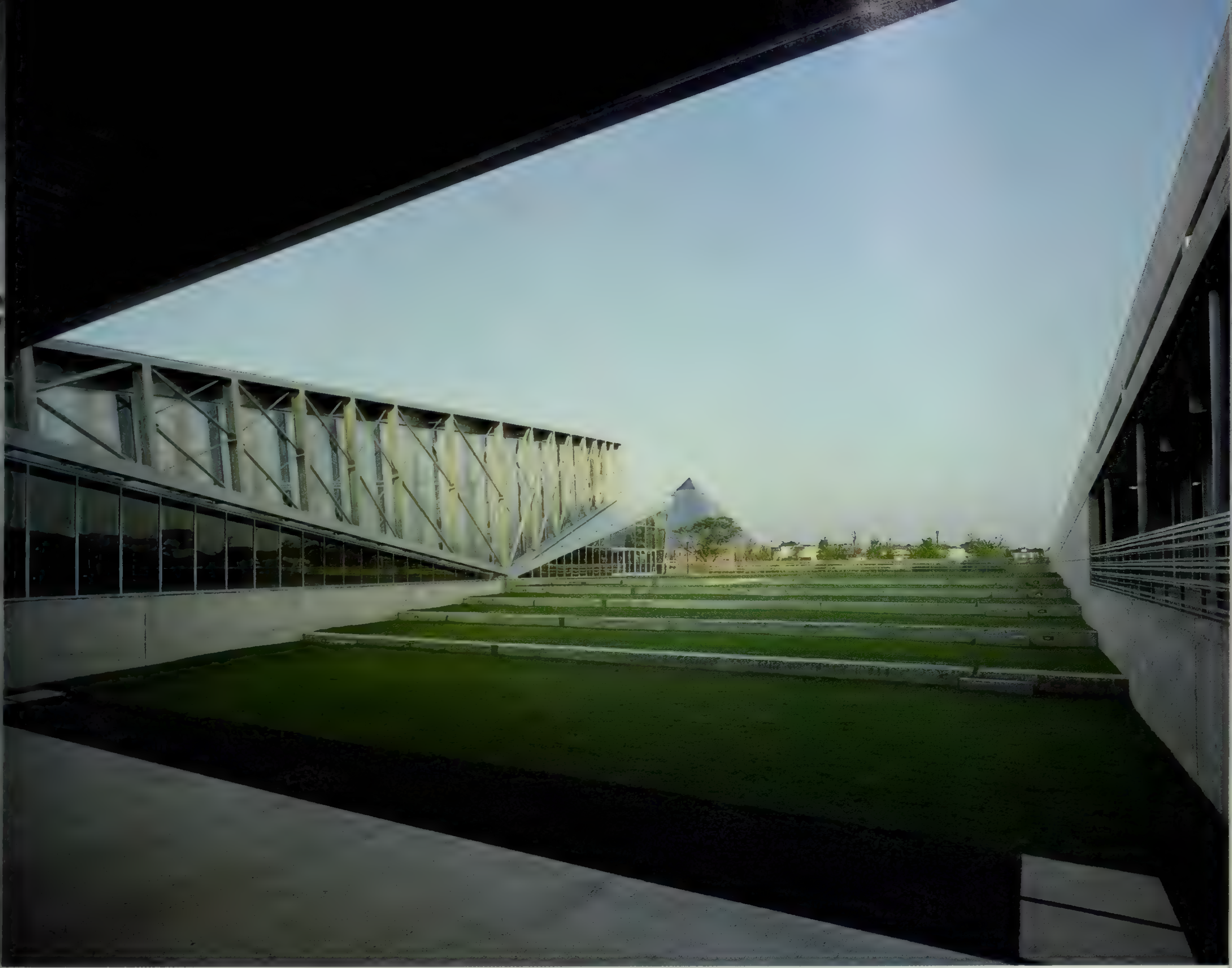
mes Roper is a freelance writer and editor who covers architecture and design.

One facade of the buil ing, facing the residen neighborhood (left two contains a small plaza with picnic tables. An open breezeway, frame by the parking deck above, separates a po from a sloped, grassy ampitheater (bottom).



SECTION A-A





ol from a grassy area that doubles as an ampitheater. The ampitheater's ped surface provides seating for 1,000 people.

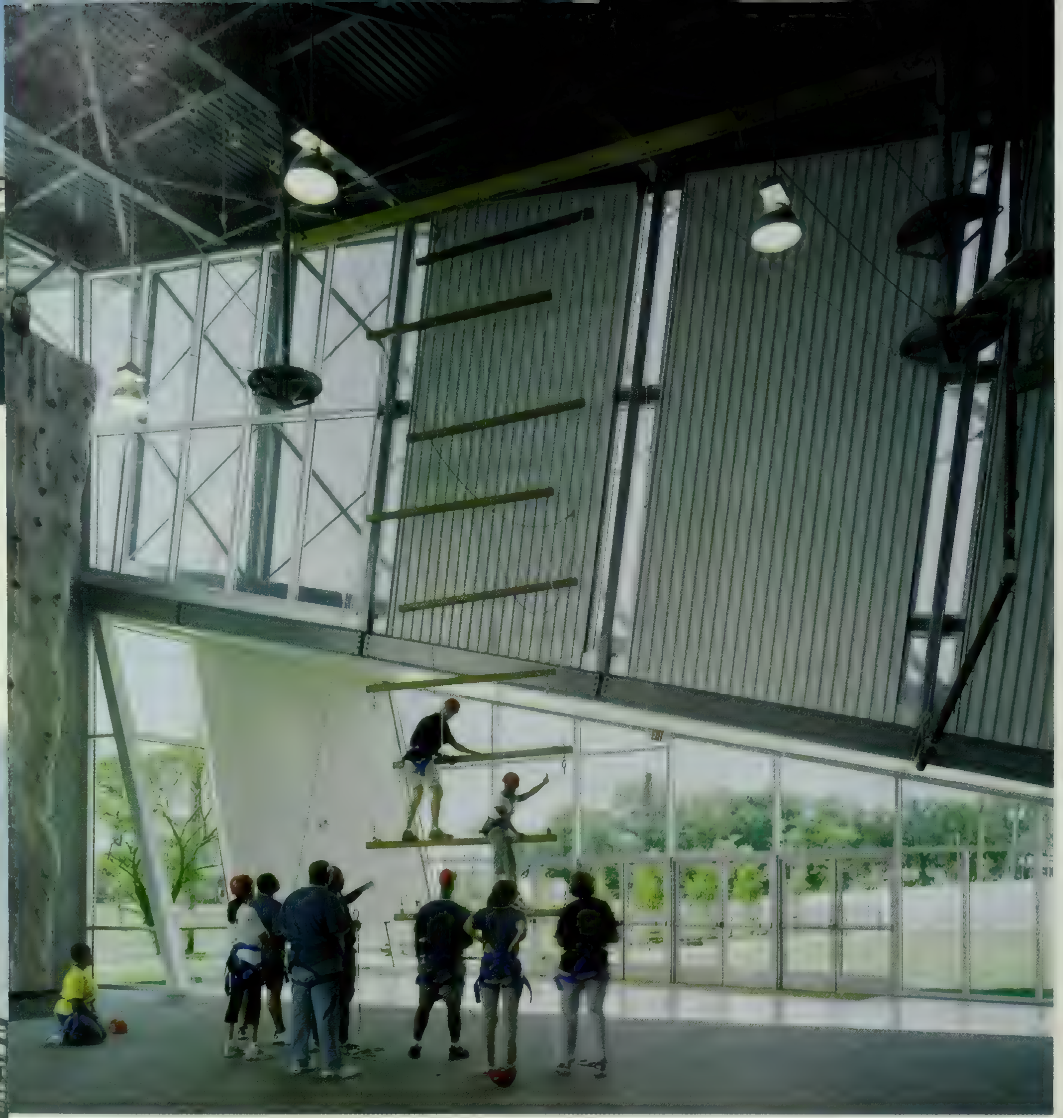
Coker notes that the architects wanted to create a building that s itself a “teaching tool,” clearly expressing its tectonics, rather than “try- ; to design an environment that might superficially appeal to children.”

Accordingly, visitors can observe much of the structural, chanical, and electrical systems of the building, which are exposed, both ide and out. Translucent wall panels reveal electrical conduits and wall ming; cutaway ceilings show heating and air-conditioning equipment. where is this teaching component more visible than in the structural keup of the south wing, designed by Guy Nordenson and Associates gineers. The long-span structure is supported on exposed cantilevered el trusses on its south and north sides. The north truss tapers up equally both directions from its center, while the south truss tapers up only on its st side. The supports for the trusses were left visible at the ground, pro- ding further clarification of the structural system.

Inside, the building's wings contain classrooms, arts spaces, staff fices, and a large gathering hall. The corrugated-metal-lined gathering a, which is primarily for student activities, also serves as a meeting and nquet space. The centerpiece of this space, located in the building's uthwest corner, is a 30-foot-high climbing wall surrounded on all sides by glass. Adjacent are six “breakout” rooms where participants split into smaller groups for discussions and activities. These are well used: BRIDGE builders, a program for youths as well as corporate groups, makes use of the climbing wall and a high and low ropes course in the gathering area. Arts BRIDGE, an afternoon arts program for inner-city children, takes place inside the arts studios located in the building's northwest corner. Work BRIDGE, which takes place in the building's classrooms and activity rooms, provides career development, training, placement, and coaching.

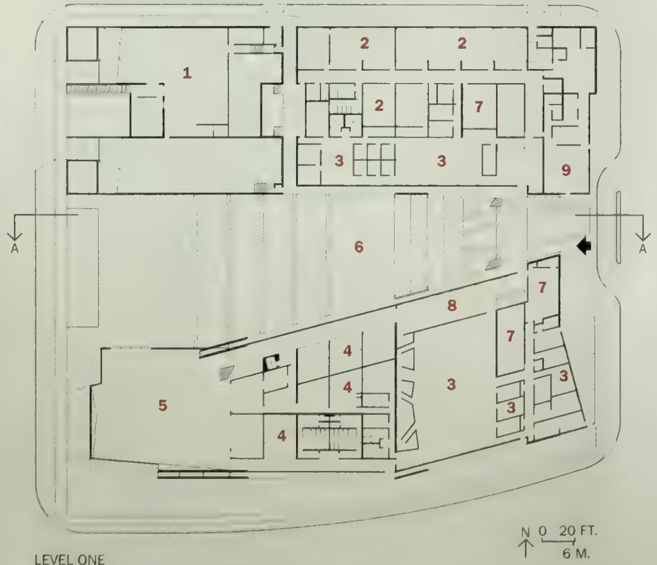
The sloped ampitheater, which also serves as a public space, seats 1,000. It separates the building's northern and southern wings and provides dramatic views of Memphis's downtown Pyramid Arena.

Incorporated into the sustainable design are retention areas for rainwater, photovoltaic arrays that produce electricity, and a solar water heater for the building's hot water. Windows are operable throughout, and the high ceilings feature wide overhangs, especially to the south. Natural light is more than abundant in the space. These are features that Boyd finds especially appealing. “What do children appreciate the most?” he asks. “Light and air.” Materials with low-embodied energy are used throughout; and the use of fly-ash concrete recycles waste material oth-

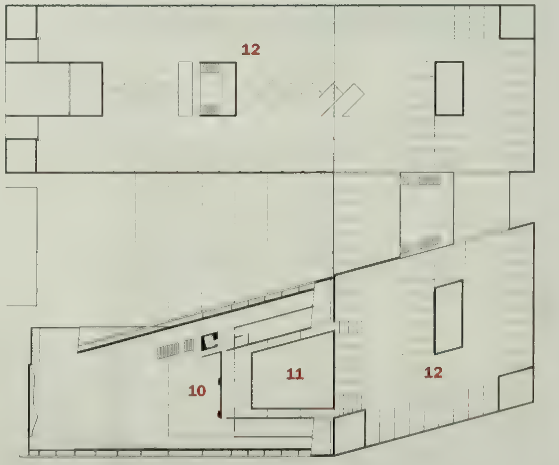


The main meeting space (left) is lined with corrugated metal and glass, allowing copious light inside. A climbing wall (opposite, top) is one of many activities that take place inside the main space. Light-filled hallways (opposite, bottom) lead to classrooms and offices throughout the building.

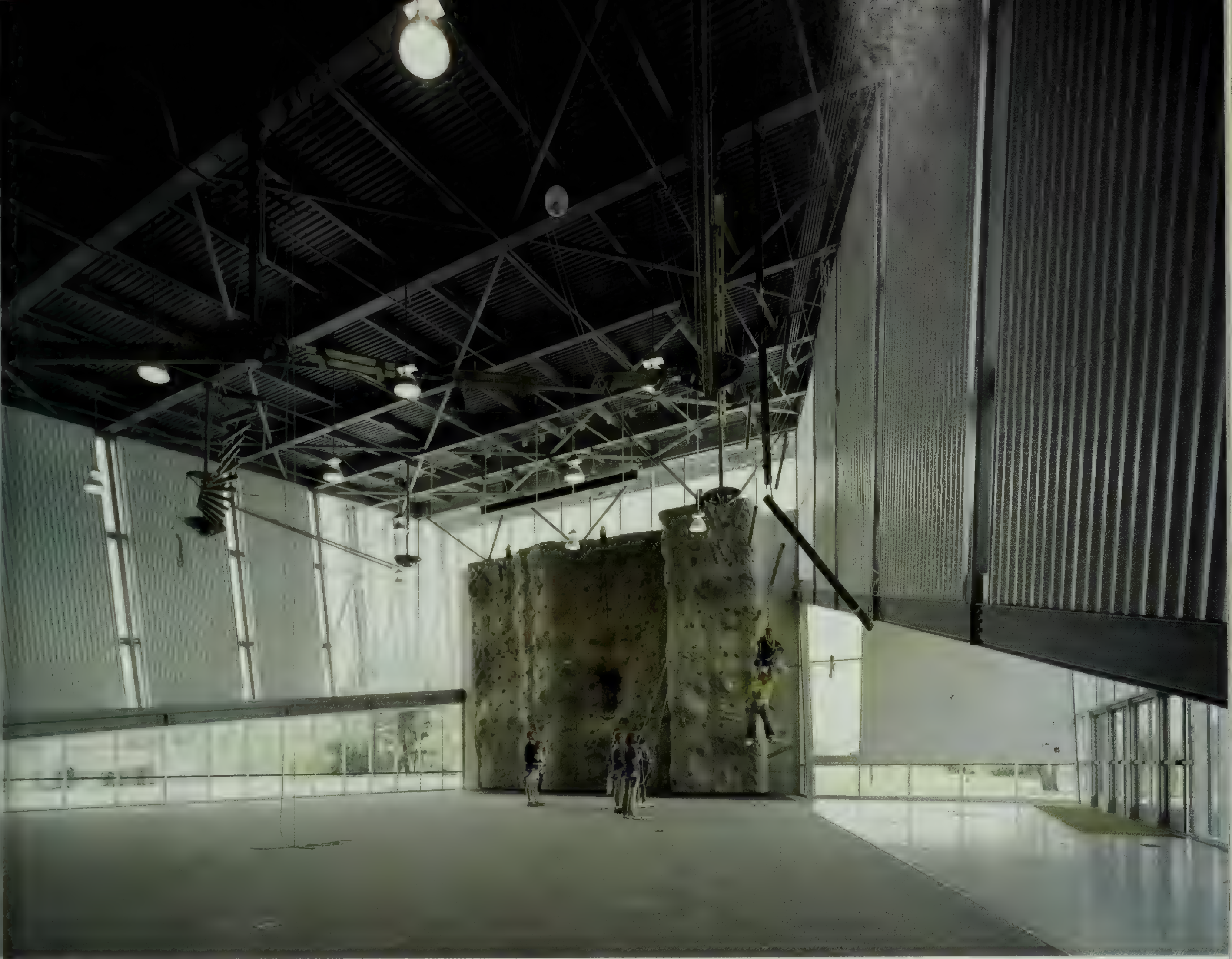
1. *Arts bridge*
2. *Classroom*
3. *Offices*
4. *Activity room*
5. *Gathering room*
6. *Ampitheater*
7. *Garden courtyard*
8. *Reception area*
9. *Cafeteria*
10. *Mezzanine*
11. *Roof terrace garden*
12. *Parking*



LEVEL ONE



LEVEL TWO



ise headed for the landfill. Two interior gardens and one roof garden
l to the building's earth-consciousness.

While the building is a notably bold and exuberant structure, it
ms perfectly at home in the neighborhood. Instead of being an
ruder, it complements its surroundings, both architecturally and in
er ways. Boyd says he admires how buildingstudio broke up the
ade of the Fifth Street entrance, so the structure doesn't appear mon-
ental or fortresslike. Indeed, the low-key entrance of the new facility
—in Coleman Coker's words—"its own front porch," complete with
door tables for casual lunches or places to relax while waiting for a
e. But just walk around the corner and head west on Auction, and the
ade gradually changes, soaring dramatically and perhaps pointing the
y to a new era. ■

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rces

tal-and-glass curtain wall: *Aluminum*

tal roofing: *MBCI*

ss glazing: *PPG Industries*

ulated panel glazing: *Polygal*
A

Photovoltaic panels: *Sharp Electronics*

Floor and wall tile: *Dal-Tile*

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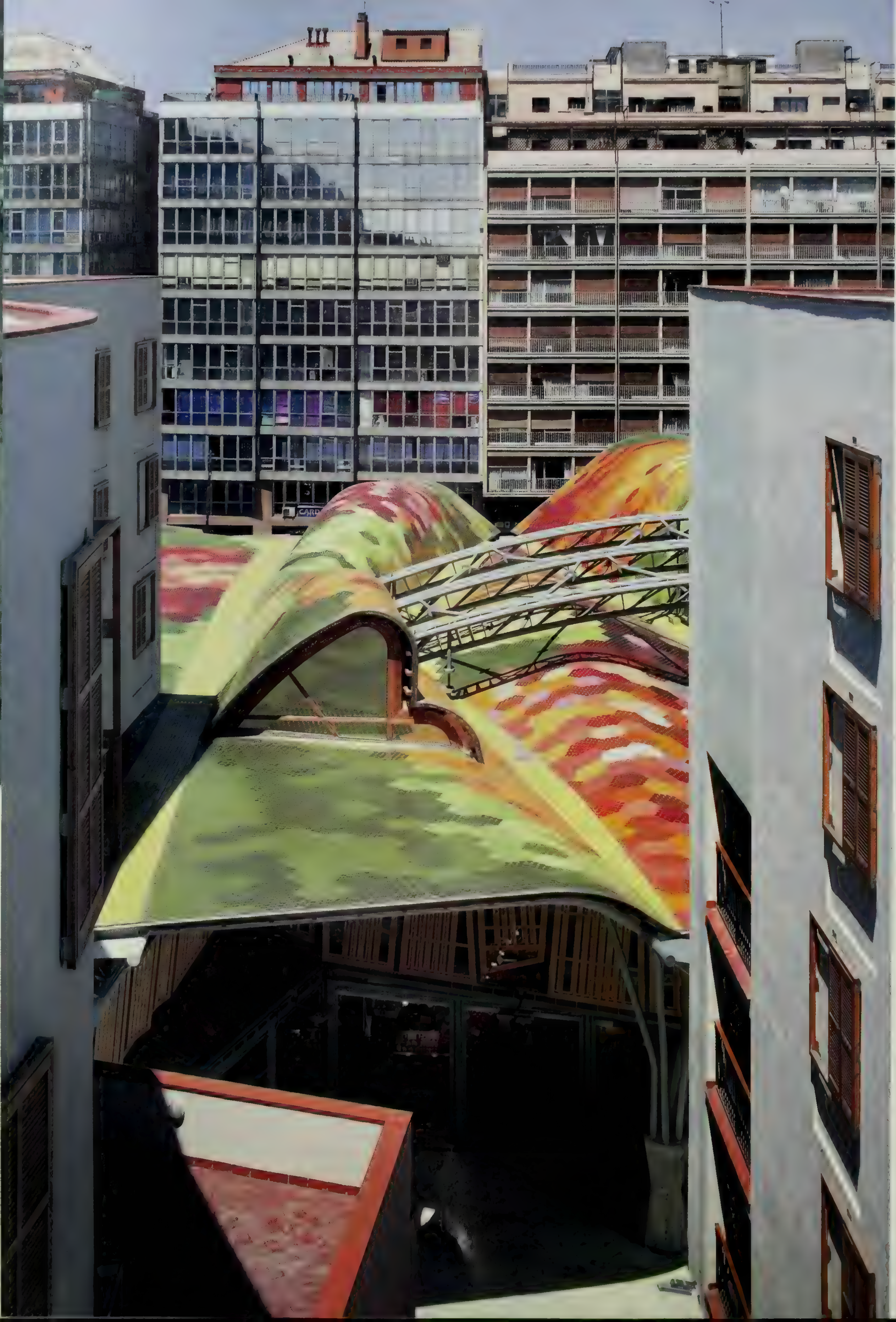

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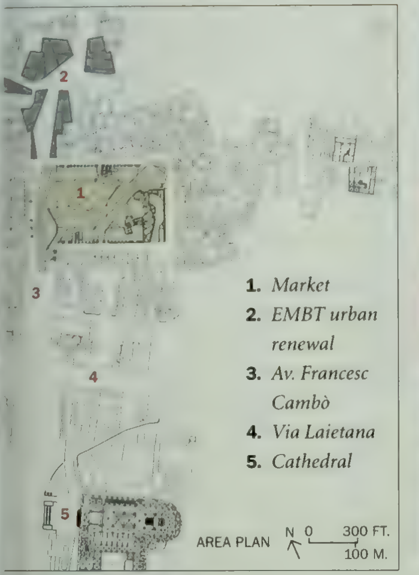
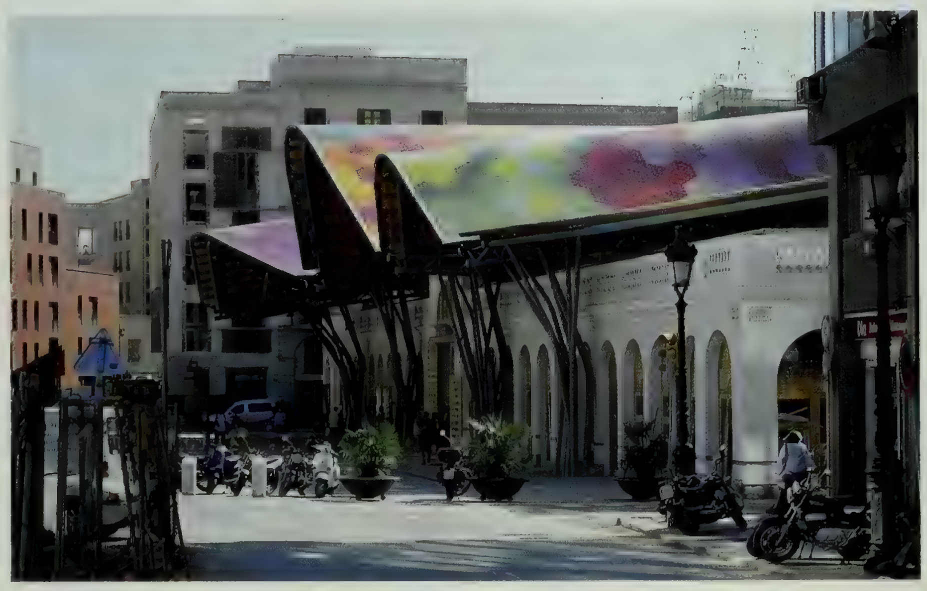
MBT daubs an innovative urban-renewal strategy with a high-spirited riot of color in Barcelona's SANTA CATERINA MARKET





David Cohn

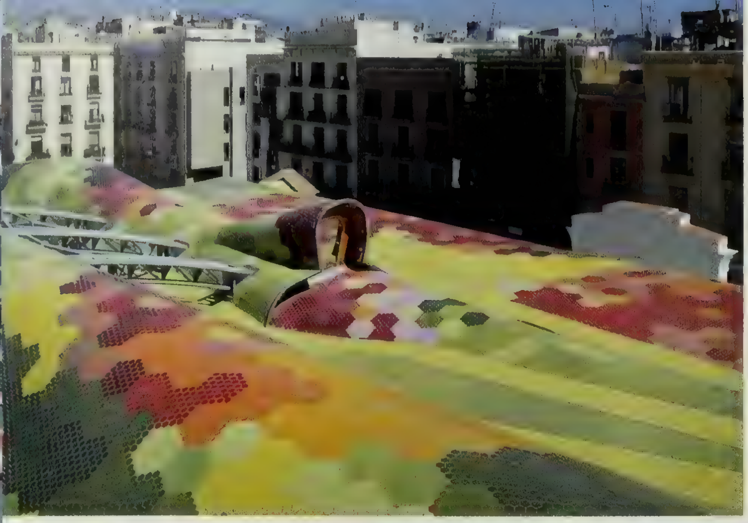
This characteristically uproarious design by Enric Miralles and Benedetta Tagliabue (EMBT) does more than transform a dour Neoclassical fresh-food market into a flying carpet of brilliant colors and agitated forms. The reconstruction of the Santa terina Market—and the architect's related urban renewal plan for the eets around it—bring life and light into one of the worst slums of rcelona's Gothic Quarter.

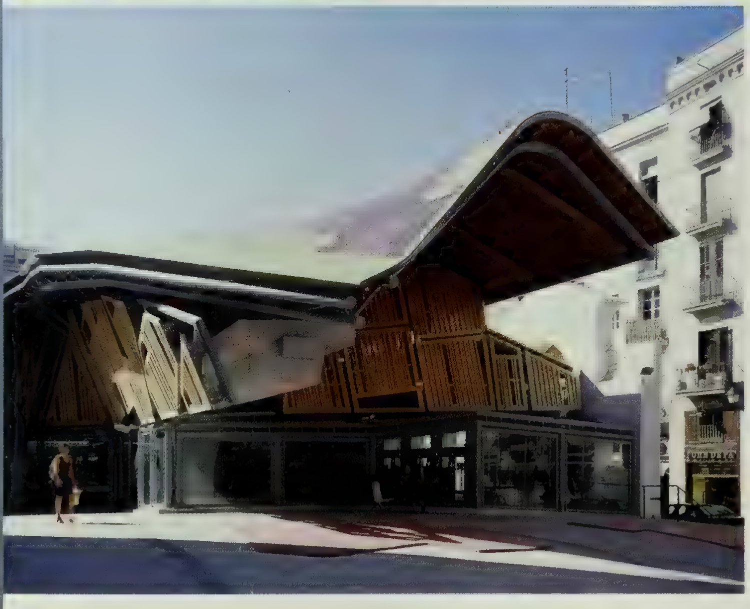
Steps away from such well-scrubbed tourist attractions as the asso Museum and the Ramblas, the narrow, dim streets and tiny airless urts of the inner city are notorious for their crowding, poverty, crime, d lack of open space and services. Though the blocks are gentrifying—re rapidly in some areas than in others—they have been subject to jor urban renewal plans as long ago as the 19th century and as recently the 1990s. The area around the Santa Caterina Market is central, ated just three blocks from Barcelona Cathedral, which presides over Gothic Quarter. But people didn't see a reason to cross the Via etana, a vehicle-thronged avenue that has split the quarter since it was through in an early-20th-century "renewal."

vid Cohn is RECORD'S *international correspondent based in Madrid.*

Historic-center interventions in recent years, financed by European Union economic-development grants, weren't massive slum clearances but did involve large-scale demolition. In the Raval, southwest of the Gothic Quarter, new cultural institutions such as Richard Meier's Museum of Contemporary Art preside over large new plazas and widened streets. EMBT's work at Santa Caterina grew out of a critique of these efforts. As the architects explain in their project brief, "Present planning methods are incapable of addressing the complexity of the historic city. Geared for immediate results, they simplify the rules of the game to an unacceptable extreme." Tagliabue elaborated, "We tried to break with the pattern of brutal demolitions followed by rebuilding using very different typologies," she said, referring to the raw, simplistic slab-blocks typical of public housing on the periphery. These "have nothing to do with the historic architecture of the city core, with

Project: *Rehabilitation of Santa Caterina Market, Barcelona, Spain*
Owner: *Foment de Ciutat Vella S.A*
Architect: *Miralles/Tagliabue – EMBT—Enric Miralles, Benedetta Tagliabue, Igor Peraza*
Engineers: *Robert Brufau (general); Jose Maria Velasco (roof); Miquel Llorens (housing)*
General contractor: *COMSA*





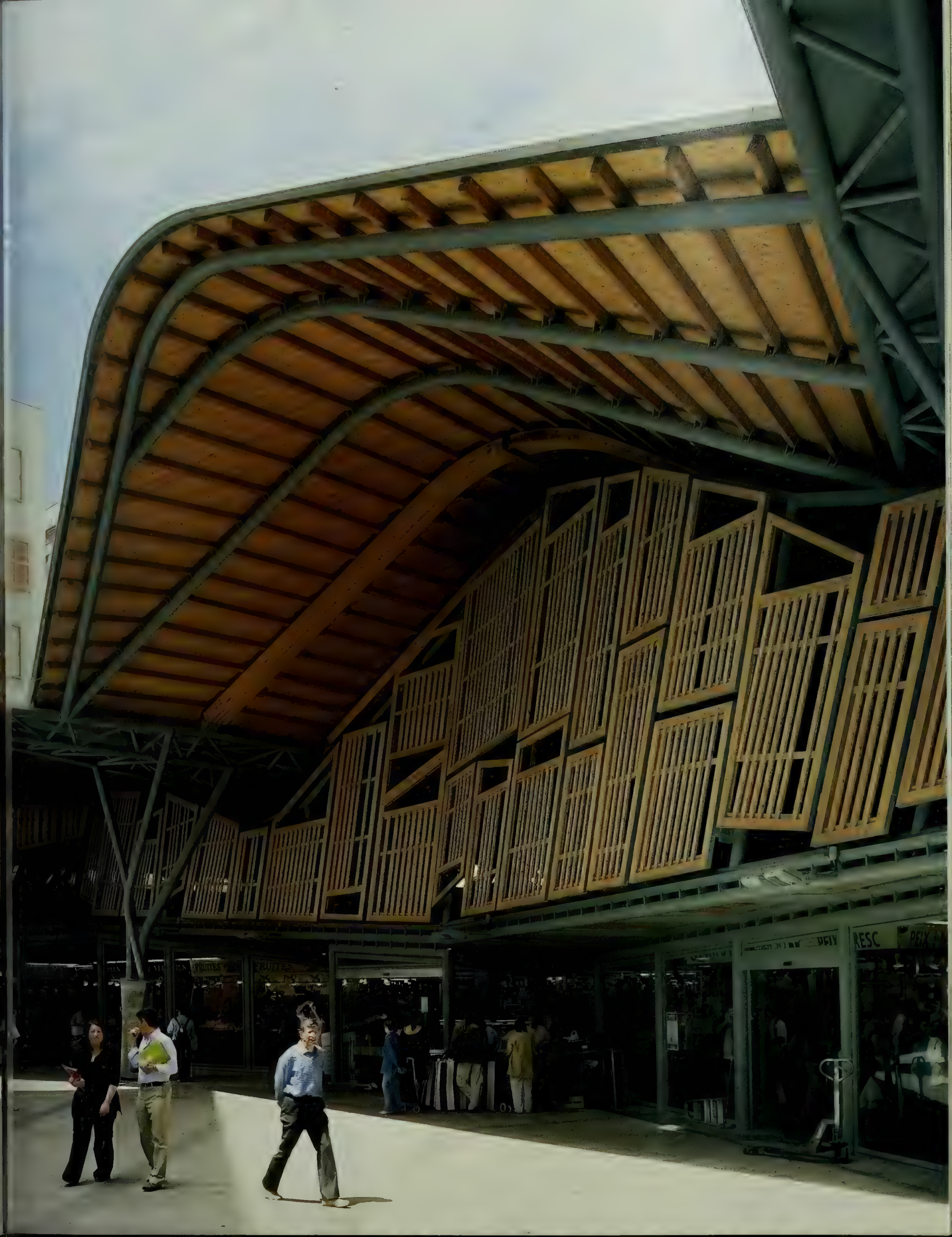
Stiffening trusses penetrate the tiled roof (top left). They carry loads to two massive concrete beams. (The cantilevered extension of one is visible at left. Glazing below the beam sheds light on preserved subterranean ruins.) The new plaza behind the market extends existing streets as a light-filled crevice (opposite), bounded by EMBT-designed public housing.

its patios and balconies."

Miralles and Tagliabue saw an opportunity in Barcelona's program to adapt declining public fresh-food markets to the changing needs and lifestyles of urban families. When city officials announced plans in the mid-1990s to replace the badly deteriorated 19th-century building that housed the market, Miralles and Tagliabue, who lived nearby, approached them with an alternative proposal, and they were officially awarded the commission in a 1997 competition.

The discovery of important archaeological remains on the site halted the project for two years, and construction had barely begun when Miralles died prematurely in 2000. Opened last May, the market is just one of a stunning series of projects begun during his lifetime that Tagliabue has seen to completion, including the Scottish Parliament, Edinburgh [RECORD, February 2005, page 98]; the campus of the University of Vigo, Spain; and an office tower for Gas Natural in Barcelona, due to be open this year.

The architects retained the white-painted masonry walls on three sides of the rectangular 1845 market structure, with many arched openings permeable to the surrounding streets. They brought the same granite pavers used on city streets in the neighborhood into the market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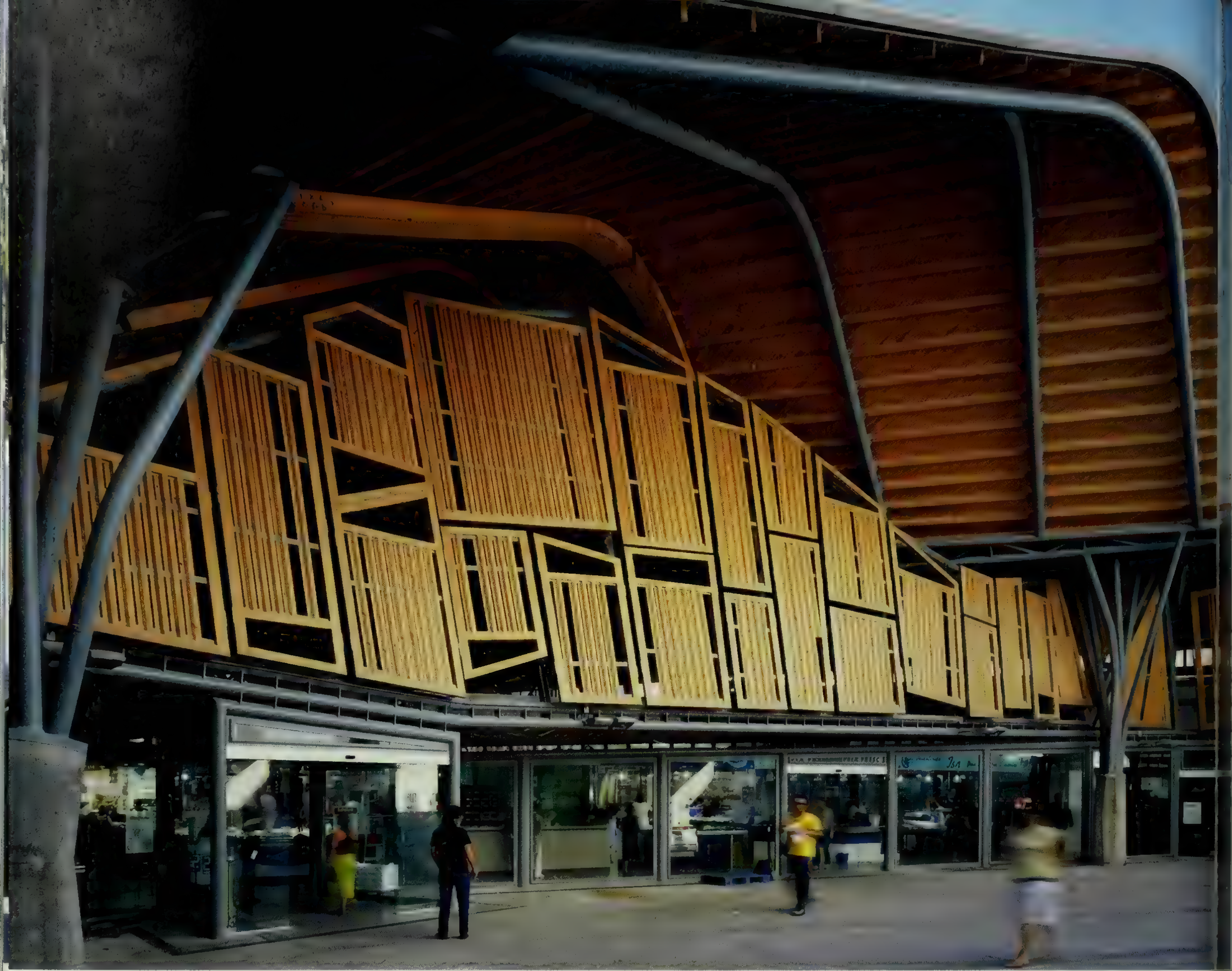


A massive glass wall (opposite and above), shaded by slatted-wood panels recalling warehouse pallets, opens the market to the rear plaza. Light slicing between EMBT's taller housing (plan, opposite) dapples its porchlike shade.

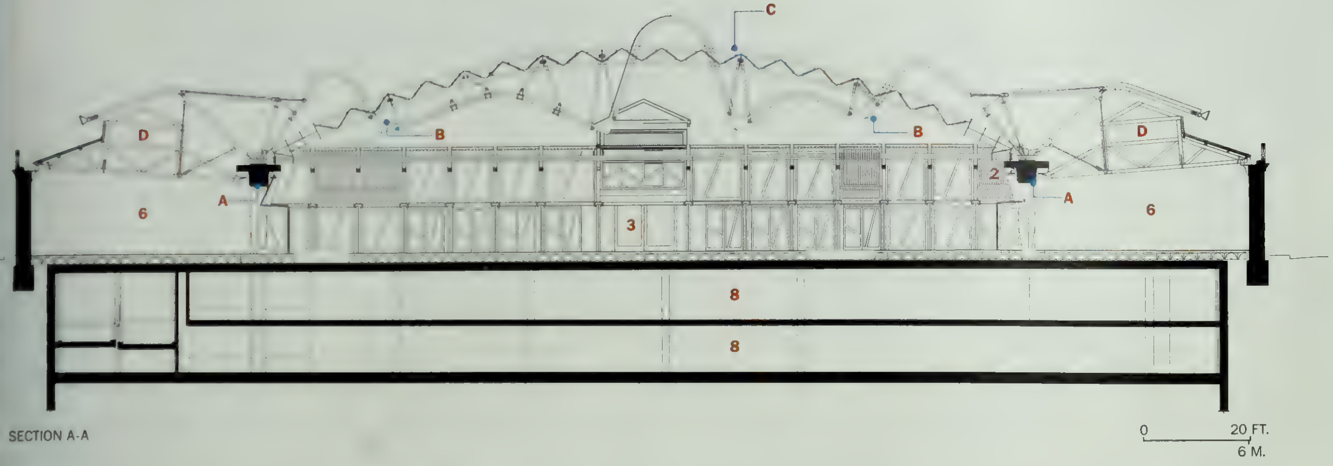
interior "so that everyone understands it's a public space," explained Tagliabue. Since the market did not need to be so large, the architects demolished the rear wall and cut in an intimate plaza. The microbial volumes of EMBT-designed housing (for elderly residents displaced by local urban-renewal work) look as if they've detached themselves from the dense surrounding blocks and floated into the market itself (plan, opposite). Urbanistically, they extend narrow existing streets as light-dappled crevices, playing off the orthogonal space within which the market sits.

Inside the market, 60 vendors' stalls mix with shops, cafés, a supermarket, a restaurant, and community services, with underground parking and a pneumatic garbage-collection system. EMBT preserved and opened to display the archaeological excavations of the medieval Convent of Santa Caterina found on the site. Overlapping the uses in the 21 million euro (U.S. $25 million) project is part of the neighborhood-revitalization calculation.

The brightly colored tile roof, visible from streets and plazas that lead to the cathedral, advertises the market like a horizontal billboard. Tagliabue explains that the roof's fluid form is meant to suggest the canvas awnings that cover patios in southern Spain, although its heavy ceramic surface belies this effect. Market stal heaped with vegetables, fruits, seafood, meat and other fresh products inspired the 67 colo of the hexagonal tiles.

The improbably elaborate supporti structure (section, opposite), with each lay laid perpendicular to the one below, is typic in EMBT's work. The undulating vaults chang in height and profile as they run from the ent facade to the back of the block, rupturing two places to form eyebrow clerestories. Und the tiles, three layers of thin pinewood lathi shape the curves. Joists of hand-crafted laminated wood carry roof loa to long-span, tubular-metal trusses running under the roof valley Three arched metal trusses cross perpendicular to the vaults, with ar extending downward to suspend the valley trusses and stiffen the vau system. The arch trusses carry loads to two massive concrete beams th run under the entire roof structure, creating a very large clear span ov the market stalls.

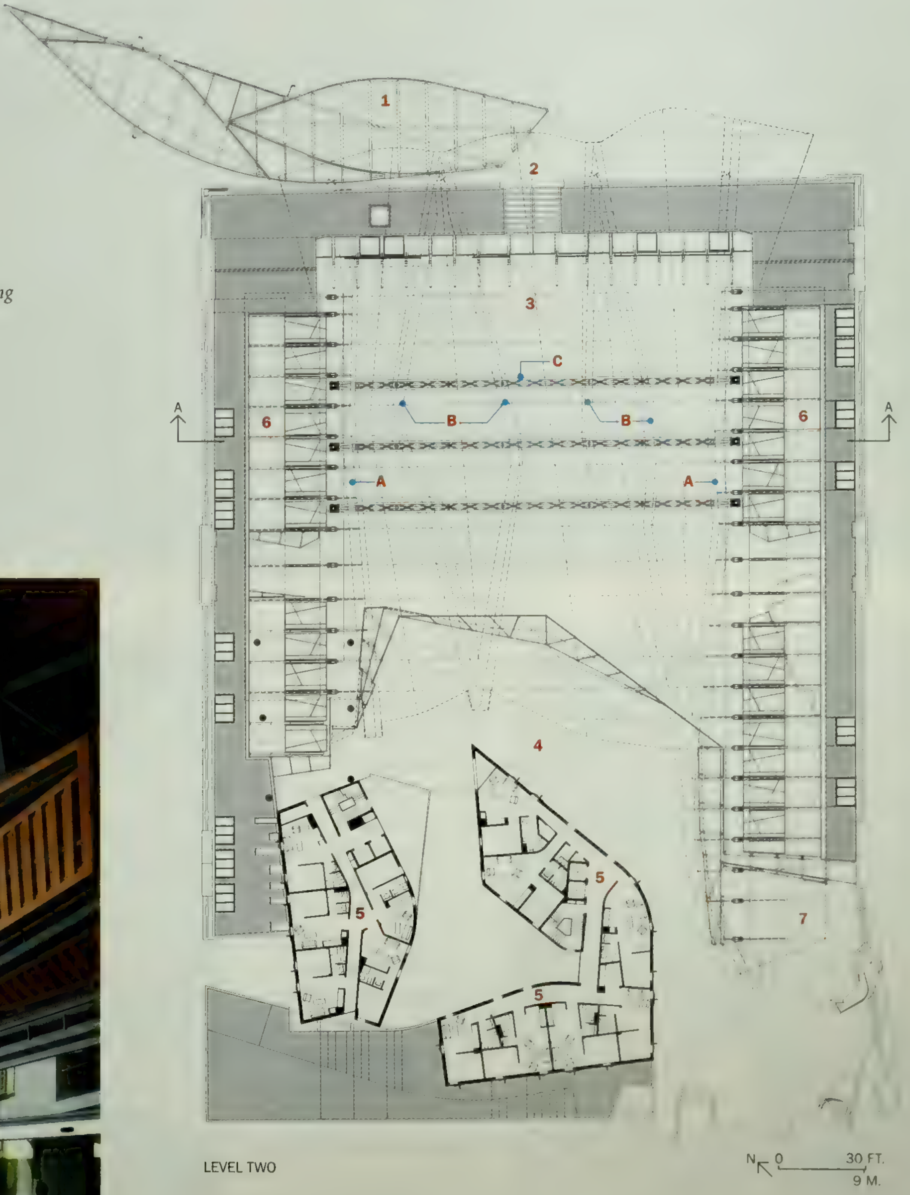
The twisting, tree-branch metalwork that supports the vaults



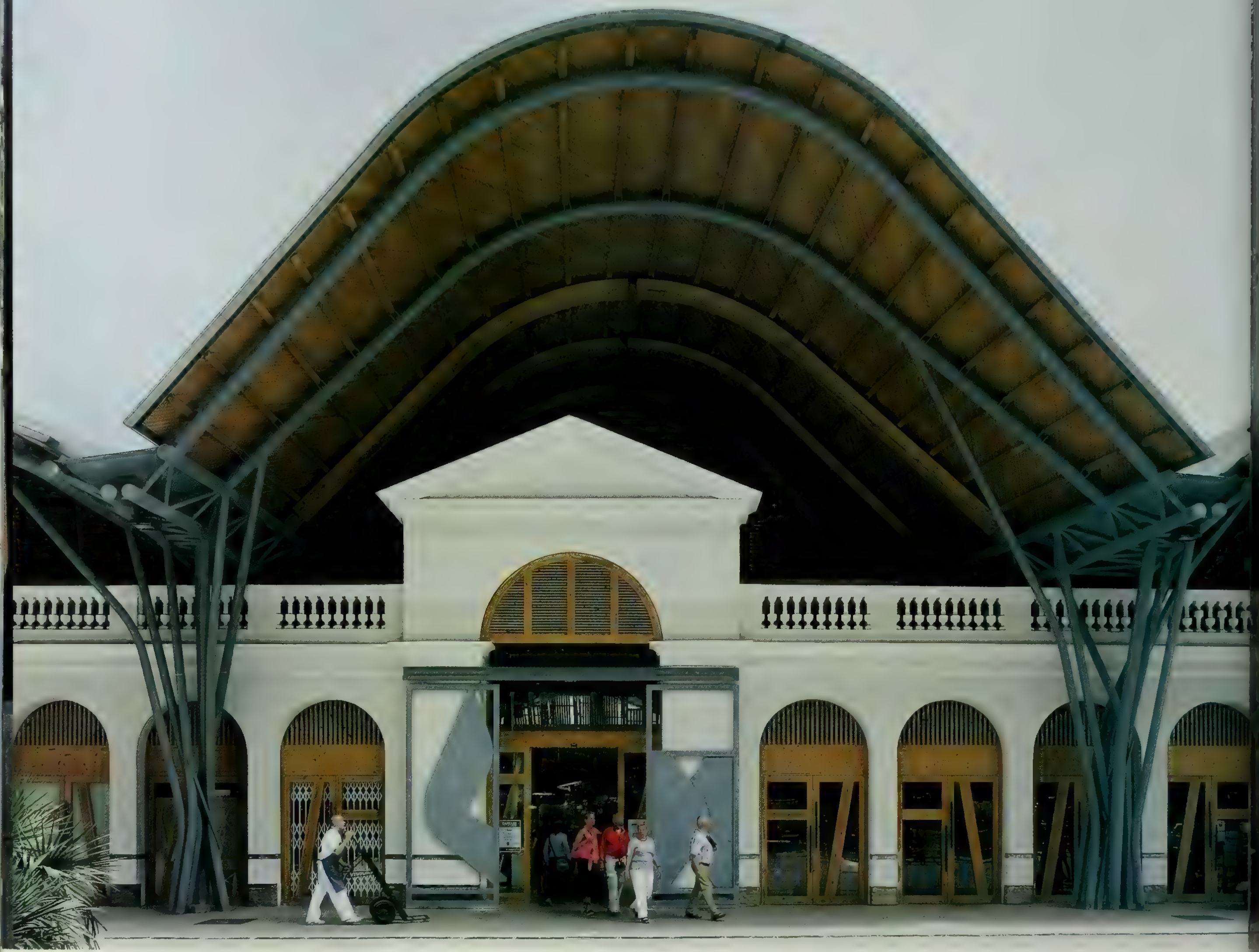
SECTION A-A

Street canopy (future)
Main entrance
Market stalls
Plaza
Public housing
Services
Ruins below grade
Parking

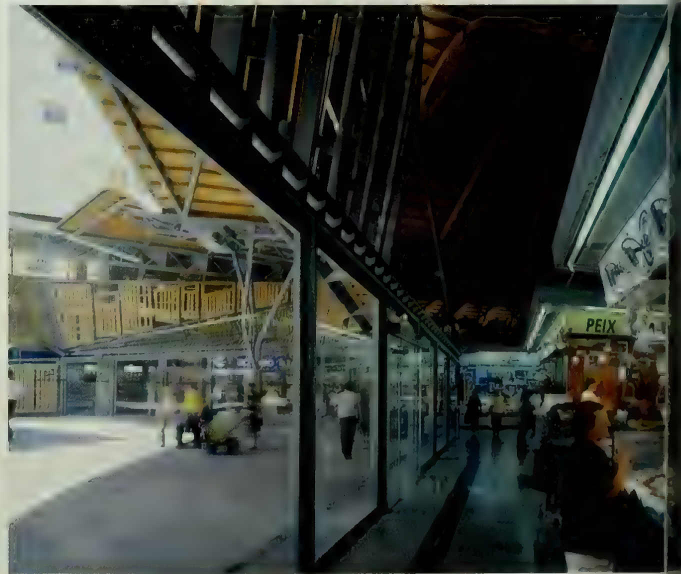
A. *Concrete main supporting beam*
B. *Valley truss*
C. *Arch truss*
D. *Reused original framing*



LEVEL TWO



The roof extends over the market's original walls at the main entrance, facing Avenida Francesc Cambò (top) in contrast to the irregular new wall at the plaza (right). The zigzagging valley trusses and voluptuous wood-framed vaults don't distract from the brightly lit individuality of the market stalls (opposite). Some original roof framing was reused (dark members in photo at left).



y extend over the street is perhaps the most overtly "organic" gesture, t colors, textures, forms, and irregular light throughout suggest a ver- ıt park in contrast to the tough urban setting.

Officials embraced the urban strategy EMBT proposed, which ends beyond the market and mixes existing and new construction to th preserve and reinvigorate the neighborhood's unique character. The ırket faces the wide Avenida Francesc Cambò, the incomplete stub of a ıjor avenue that extends a few blocks across Via Laietana as a link to cathedral. It was part of the massive 19th-century expansion of rcelona, laid out by Ildefons Cerdà, that would have tied the medieval y into his famous chamfered-corner gridiron. The unbuilt part of the eet, still on the books in the 1990s, contributed to the blight of build- s in its path.

EMBT's urban design narrows the avenue-to-nowhere to form a destrian-scaled gateway to the neighborhood beyond, framing it with w public housing that is literally supported on and extended from sting buildings. Tagliabue explains: "Building out from existing struc- es, you have to maintain many things, such as the height of the floors, the consequences of one type of construction on another, that in the st could only be controlled through very elaborate legislation. Although the two buildings of the gateway were designed by different architects, they have many things in common that come from the necessity to include the existing architecture."

By strategically introducing new buildings as well as hybridizing and modifying the volumes of existing ones, EMBT surgically consolidated what had been the broken, irregular path of the unrealized avenue. In contrast to the urban-scale order that would have been imposed over the winding maze of medieval streets, EMBT selectively edited what existed. In this way, the idiosyncrasies of the area's growth over the centuries remain legible in the new, larger structures of open space that had been created by earlier demolition. As the architects explain in their brief, "The first mistake is to talk about old and new. Whatever has managed to survive into the present is current, useful, and contemporary. And it permits us to move back in time in order to continue forward." ■

Sources

Roof tiles: *Ceramicas Cumella*
Floor paving: *Galician granite*
Wood structure: *FRAPONT*
Doors: *Tecfire Doth*

For more information on this project, go to Projects at **www.archrecord.com**.

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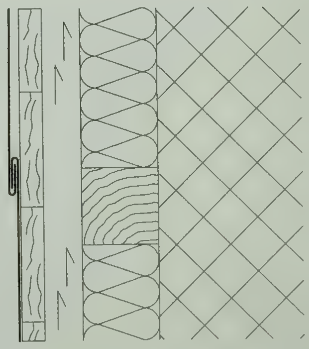

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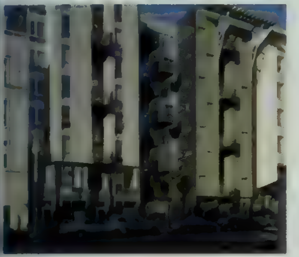


1.

San Francisco, California

David Baker + Partners lends a helping hand to struggling immigrant families living in the Tenderloin district.

2.

Judenburg, Austria

Mack Architects' high-density subsidized housing pays a whimsical tribute to color while using prefabricated components and modest building materials.

3.

Philadelphia, Pennsylvania

With this project, Onion Flats takes its imaginative design approach beyond the drawing board, going on-site to build the property.

4.

San Diego, California

Jonathan Segal Architects invigorates the urban landscape of a San Diego neighborhood with a Modern nine-unit housing complex.

more information on these projects, go to Building Types Study at 'w.archrecord.com.

By Jane F. Kolleeny

Following strong growth over the past decade, housing starts will ease off in 2006 to the same level as 2004, according to forecasts of the National Association of Home Builders (NAHB). While this puts the brake on housing construction's rapid pace in recent years, the overall message is positive, and the level of building is considered historically healthy.

During this year's slowdown, multifamily and affordable housing will both do well, says NAHB chief economist David Seiders. Of this activity, infill development—projects on small land parcels close to urban centers—will account for a larger percentage than before, says AIA's chief economist Kermit Baker. With developable land dwindling and the population growing in major urban centers of the U.S., this trend is no surprise. It sets the stage for interesting architectural solutions for buildings that occupy lots deemed difficult until now: peripheral areas or locations in downtrodden or abandoned neighborhoods.

Featured here are four mid-rise, multifamily housing projects. Instead of perpetuating sprawl, these projects offer attractive alternatives to the unchecked development of single-family communities. All of these projects embody a socially responsible approach to design, either by virtue of their use of sustainable technologies or by responding to the needs of low-income residents. Each project expresses a modern sensibility, often working within a modest budget.

Rag Flats, by the firm Onion Flats, brings new life to a blue-collar neighborhood in Philadelphia, transforming an old rag factory into a residential garden community that, among other things, offers a novel interpretation of the Philadelphia "Trinity" row house. For 22 units of subsidized housing at Judenburg West in Austria, Mack Architects used prefabricated panels made of cloth and wood for walls, floors, and colorful clip-on balconies. K Lofts in San Diego, by Jonathan Segal, shows how a Modern nine-unit development on an abandoned lot in a neighborhood of historic houses and apartment buildings can break with convention without diminishing context. At Curran House, set in San Francisco's rugged Tenderloin neighborhood, David Baker brings a spark of hope to a block of aging apartment buildings while housing a group of Asian immigrant families.

In its Home Design Trends Survey (www.aia.org/release_111705_HDTSQ3), the AIA notes that the slowing of home purchases anticipated for 2006 is due in large part to the increasingly high cost of owning a home. This month, we present examples of housing meant for the moderate- and low-income populations marginalized by this trend. ■

Curran House
San Francisco, California

1

DAVID BAKER CREATES AN OASIS FOR FAMILY LIFE IN A DISTRICT KNOWN FOR BEING INHOSPITABLE.

By John King

Architect: *David Baker + Partners, Architects—David Baker, FAIA, partner; Peter MacKenzie AIA, project architect; Bradley Sugarman AIA, designer; Michelle Peckham, interiors*
Associate architects: *Gelfand RNP Architects*
Client: *Tenderloin Neighborhood Development Corporation*
Engineers: *Pete O. Lapid + Associates (electrical); Structural Design Engineers (structural); Tommy Siu + Associates (mechanical)*
Consultants: *Andrea Cochran Landscape Architects (landscape); Wilson Ihrig + Associates (acoustical); Shift Design Studio (color)*
General contractor: *Cahill Contractors*

Size: *83,690 square feet*
Cost: *$15 million*
Completion date: *2005*

Sources
Curtain wall/windows: *EFCO*
Roofing: *Siplast*
Glazing: *Pulp Studios*
Doors: *US Aluminum; Haley Door*
Locksets: *Schlage*
Closers: *LCN*
Elevators: *Kone*
Glazing: *Pulp Studios*

For more information on this project, go to Building Types Study at **www.archrecord.com**.

Jammed with weary-looking buildings along blocks of drug dealers doing business, San Francisco's Tenderloin isn't a neighborhood where you'd expect to find children. But large numbers of Asian immigrant families now live there, drawn by proximity to the downtown shops and restaurants where many newcomers find work.

Program

In 2001, when the Tenderloin Neighborhood Development Corporation (TNDC) had a chance to build housing from the ground up, the nonprofit, which manages 1,600 apartments in 21 buildings, knew the population it should serve. "There are 4,000 children in the Tenderloin," explained Donald Falk, TNDC's executive director. "There's a tremendous demand for family housing, and very little exists."

Curran House, a 67-unit complex where 38 apartments have two or three bedrooms, opened in 2005. It rises from a lot that's long and relatively shallow, wedged between aged apartment buildings on three sides. Zoning set the height of one side of the lot at 85 feet and the other at 120 feet, with a 20-foot setback from the street at the sixth floor. Parking spaces were required despite proximity to subway and bus lines.

"This is the hardest floor plan we've ever done—a Rubik's Cube puzzle where we had this volume and had to slide the units in," said Curran House architect David Baker, FAIA, who has made a specialty of high-density and often low-cost housing.

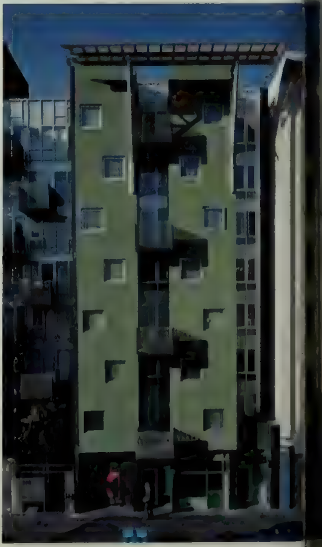
Solution

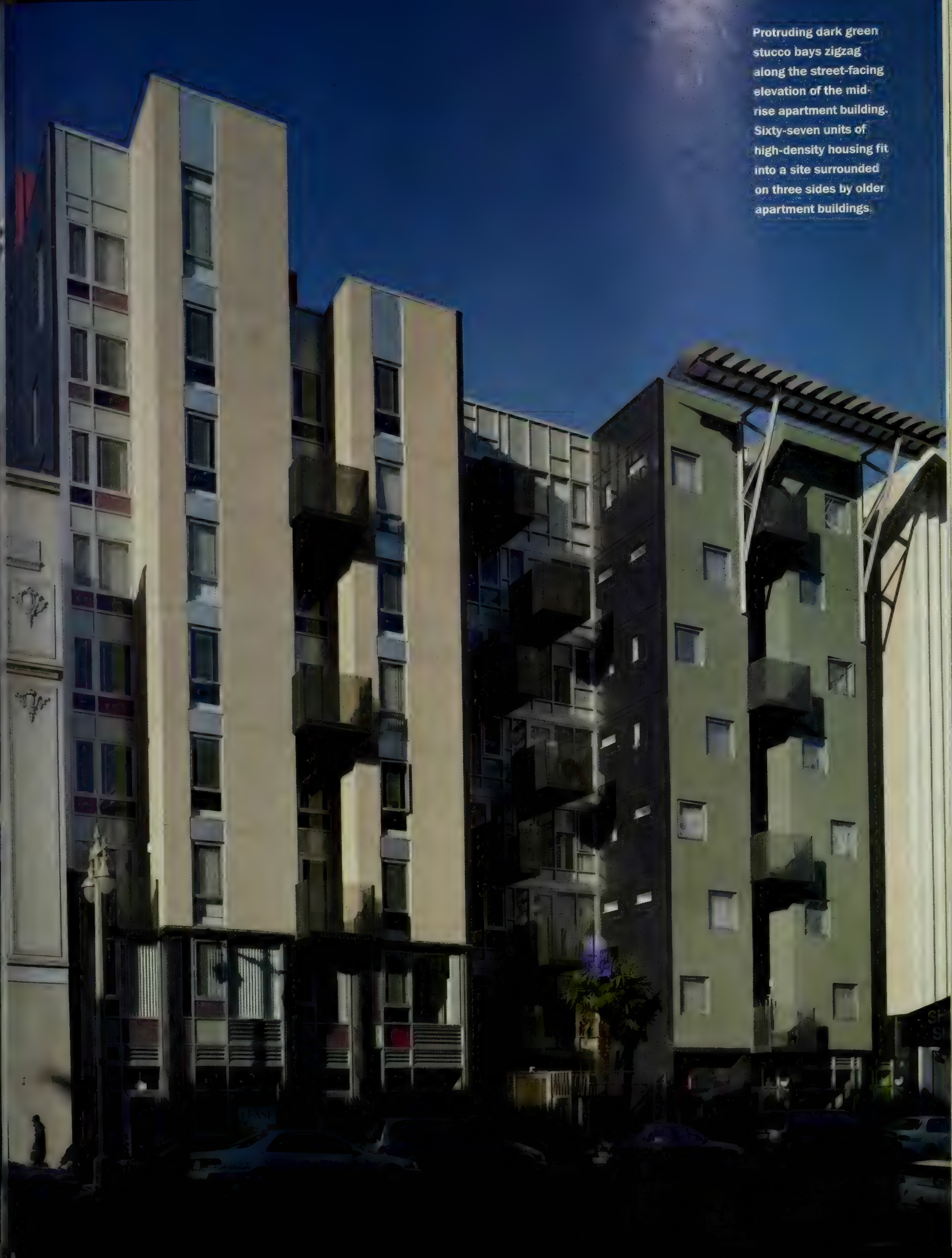
Baker's first move to solve the puzzle came when he convinced city planners to waive the upper-floor setback requirement, allowing the space to be used in vertical notches running the length of the building. The central bay, for instance, was pulled back 12 feet to allow for an entry plaza with a palm tree. He also won a variance to eliminate the parking, allowing two small storefronts and a basement office for TNDC to fill the space. The recessed bays add literal relief to the block's tight wall of mid-rise structures.

From the street, Curran House resembles a three-dimensional collage. Along the sidewalk on the north side, protruding bays are cloaked in dark green stucco punctuated by square windows in a zigzag pattern, while the south side has vertical strips of yellow stucco. For extra variety (and extra space), balconies pop out from 20 of the apartments.

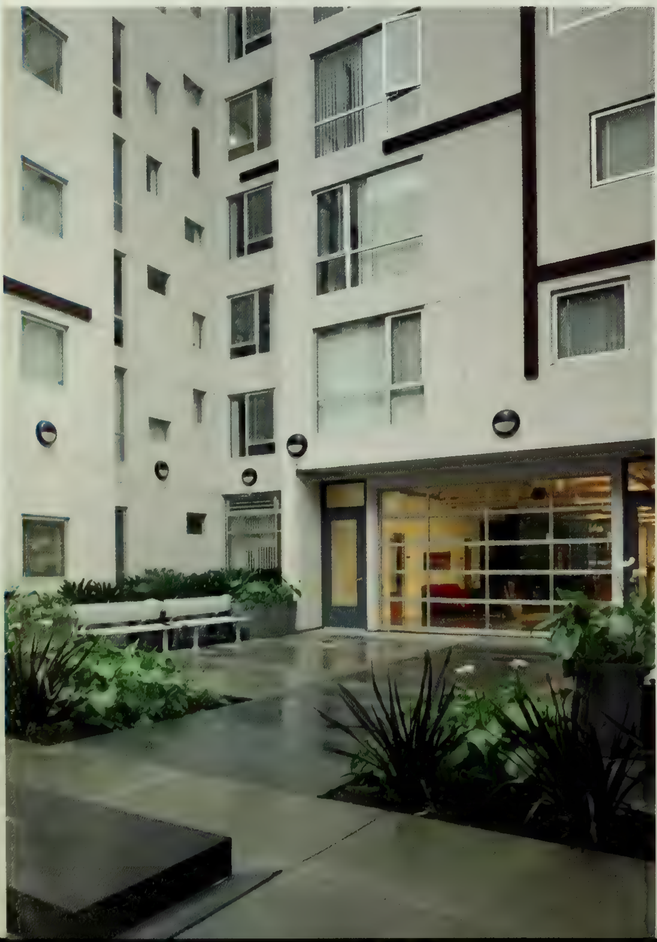
The clean lines of the building aren't just for show: They work with the building's column and sheer walls to define efficiently laid-out, family-size units. Indeed, for all the intricacy of a plan that results in 223 units per acre, the apartments themselves feel relaxed; the two-bedroom apartments are 1,050 square feet,

John King is the urban design critic for the San Francisco Chronicle.

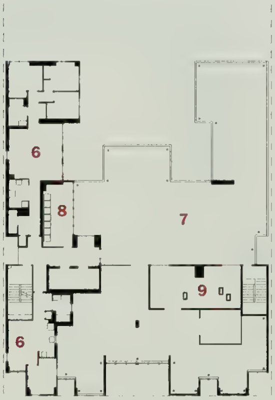




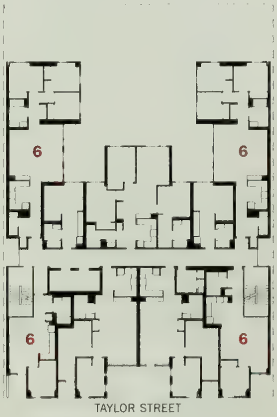
Protruding dark green stucco bays zigzag along the street-facing elevation of the mid-rise apartment building. Sixty-seven units of high-density housing fit into a site surrounded on three sides by older apartment buildings.



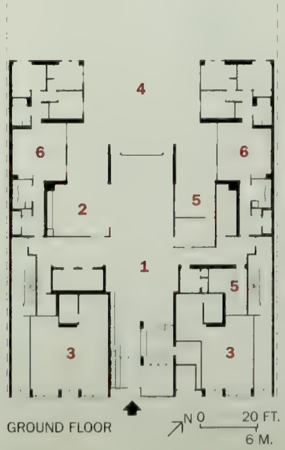
1. *Lobby*
2. *Community room*
3. *Retail*
4. *Garden*
5. *Social services*
6. *Units*
7. *Roof terrace/ community garden*
8. *Laundry room*
9. *Utility*



TOP LEVEL



APARTMENT FLOOR



GROUND FLOOR

with extensive closet space in the master bedroom, as well as storage cabinets tucked between the kitche and the living room.

Though fairly plain, the apartments have small touches that set Curran House apart from the subsidized norm. One or two panes of glass in each unit are translucent, o tinted red or green—not enough to seem lurid, but just enough to add visual texture. And recycled ingredients were used wherever possible, such as linoleum corridor floors made of linseed and sawdust.

The biggest surprise of the project is its significant amount of open space—a distinct rarity in th dense Tenderloin. The broad lobby with stained concrete floors has a rear glass wall, which rolls up like a garage door to a courtyard designe by Andrea Cochrane that includes a shallow fountain and extensive landscaping. "Residents should have space that's calming and life supporting, because it's really hars out there," Baker said, referring to the often-edgy Tenderloin scene. Baker also stressed that such landscaping, on a tight budget, wouldn be possible atop an underground garage. The dirt would be too shallow, restricting the greenery to potted plants. He called the trade-off an example of "putting the quality of life over quality of parkin

There's a roof deck as well, which Baker pulled into the daily life of the residents with two quite different functions: a glassed-in laundry room dubbed "the penthouse," which runs along the south edge of the building, and 12 deep metal tubs large enough to accommodate family gardens.

Commentary

Viewed strictly in terms of design, Curran House adds syncopation ar color to a neighborhood where too many blocks are marked by a grim monotony. But the most impressive accomplishment is the gracious humanity once you step inside. Curran House sends the message that families should live in building that offer a sense of comfort and respect—regardless of income. ■

project provides ndant green space its residents—a ftop garden (above) a courtyard in the r, accessed through lling glass garage r (below and oppo- , bottom). As well, a whimsical entry, stained concrete floors, and Modern interior elements provide an appealing respite from the city hubbub (below and opposite, top). Apartments are simple and modest (right).

Judenburg West Housing
Judenburg, Austria

2

MACK ARCHITECTS USES PREFAB COMPONENTS TO CREATE COLORFULLY BEJEWELED SUBSIDIZED HOUSING UNITS IN A SMALL AUSTRIAN TOWN.

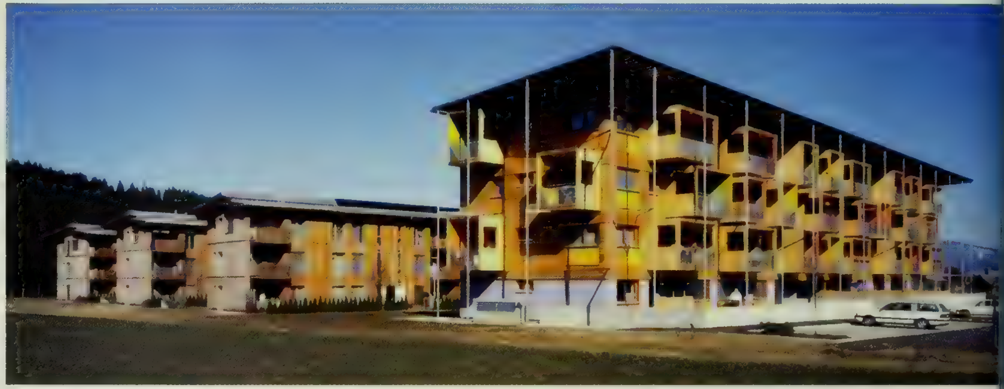
By Liane Lefaivre

Architect: *Mack Architects—Mark Mack, principal; Arial Asken, design*
Architect of record: *Roland Hagmüller, Vienna*
Client: *Ennstal, Wohnbau Genossenschaft*
Engineer: *D.I. Johann Riebenbauer; D.I. Wolfgang Hebenstreit (structural)*
General contractor: *Liebbau Weiz*

Size: *21,000 square feet*
Cost: *$2.3 million*
Completion date: *1999*

Sources
Prefabricated structural system: *KLH Massivholz GmbH*
Wood: *KLH Massivholz GmbH*
Metal roofing: *Kalzip; Corus Bausysteme*

For more information on this project, go to Building Types Study at **www.archrecord.com**.



If you thought Mark Mack's Southern California buildings were polychromatic because of some local Latino influence, you would be right—but only partly. Mack hails from Austria, which unlike its neighbor Switzerland, has an architecture that historically is as colorful as any in the world. Train stations, churches, castles, schools, factories, hotels, concert halls, houses, apartment buildings—you name it—all come in hues of dusty pink, mint green, burnt orange, pale sienna, baby blue, and cobalt. Even the plastic sheeting used for wrapping bales of hay in the snowy fields outside of Judenburg are an exquisitely pale turquoise.

Unlike Modernists from the 1920s and 1930s, such as Bruno Taut, Le Corbusier, Gerrit Rietveld, and Theo van Doesburg, Mack doesn't have a highfalutin theory to go along with his choice of colors. He admits, "There is no academic backing to this. I just think everyday life is full of color and multivalent. And this, the vernacular of real people in the real world, is a quality I give to my architecture." He applies this approach to all his projects, whether in Los Angeles or Austria.

Program

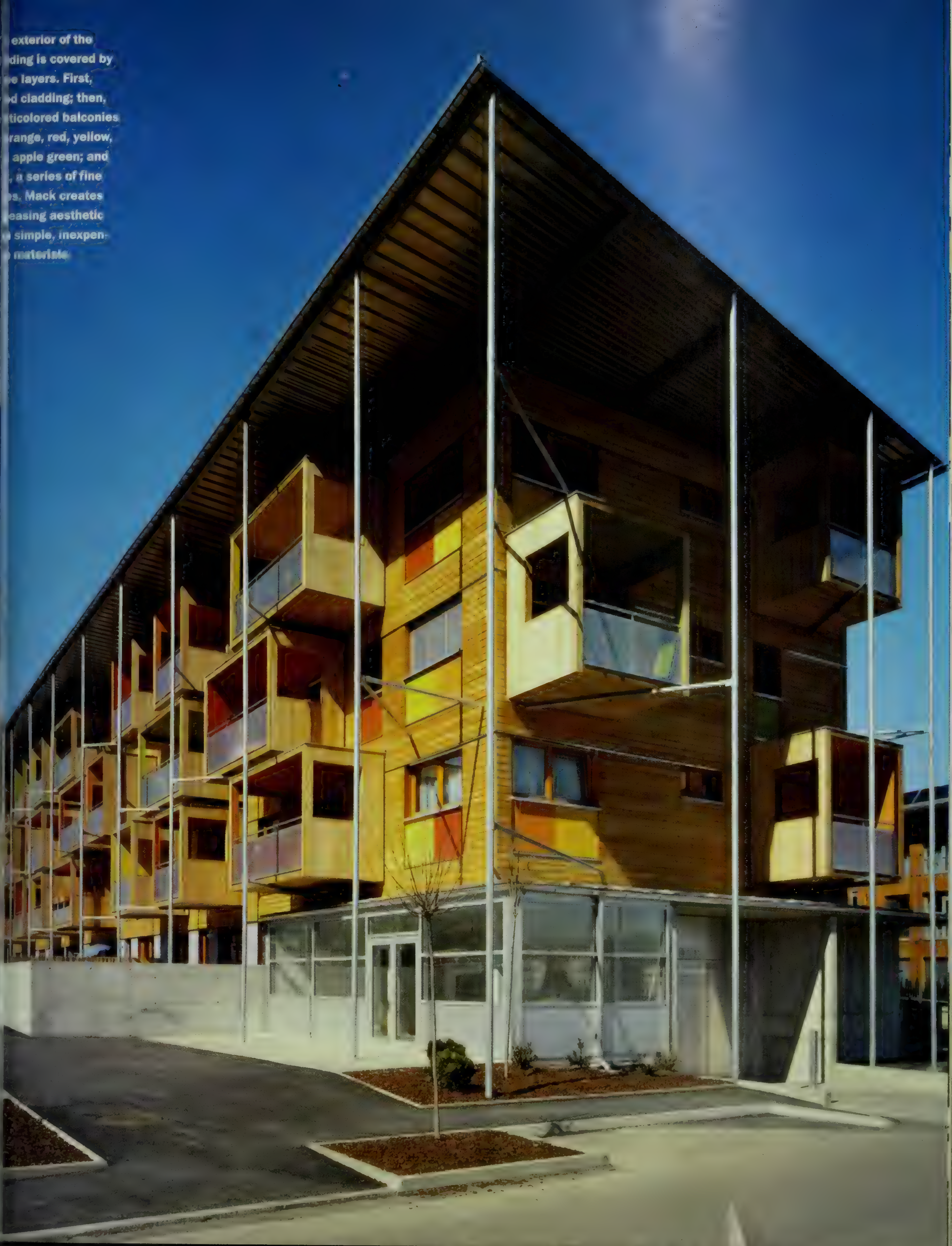
About three hours from Vienna by train, near the center of Austria, Judenburg is a small, 13th-century hill town that boasts one colorful building after another. It happens to be Mack's hometown. As its economy has grown, Judenburg has expanded beyond its historic core, and the area to the north has emerged as a location for low-cost social housing.

In Austria, social housing operates on a lease-to-buy system, in which the state subsidizes rents, then allows tenants to buy their apartments at low prices after 10 years. The system not only create affordable housing, but establishe an incentive for occupants to invest in their buildings. The city o Judenburg and the state of Styria sponsored a competition that Ma won for the master plan to develo 600 units of housing and the infrastructure to support it. The client, nonprofit housing provider, hired Mack to design Judenburg West— 22-unit, four-story building.

Solution

For his local collaborator, Mack chose Roland Hagmüller, who was friend from his days at the Universi der Bildende Künste in Vienna. Tha was in the exuberant Pop Sixties, when the rebellious antics of desig ers such as Hans Hollein, Walter Pichler, Haus-Rucker-Co, and Coo

Liane Lefaivre is the chair of Architectural History and Theory at the University of Applied Arts in Vienna. Her latest book, with Alexander Tzonis, is Critical Regionalism *(Munich: Prestel, 2004).*



exterior of the
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apple green; and
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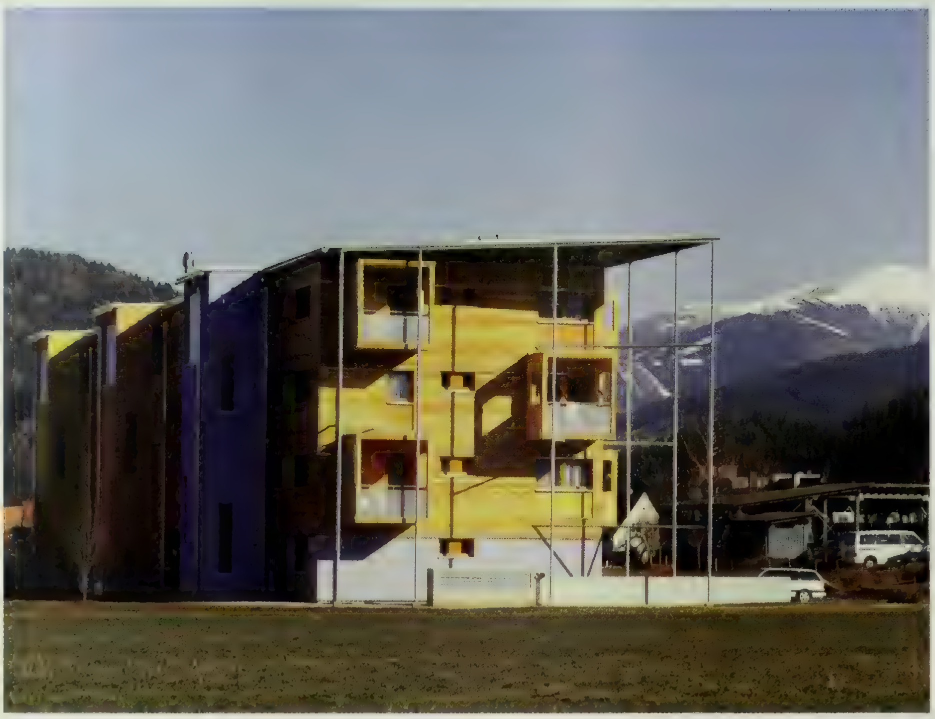
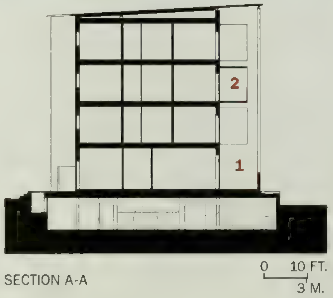
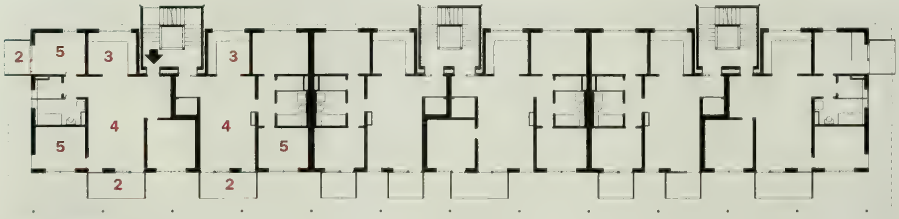
materials.



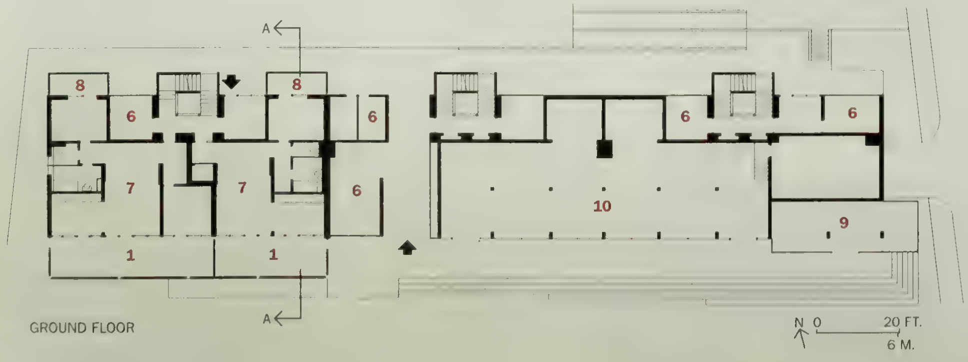
1. *Front garden*
2. *Balcony*
3. *Kitchen/dining*
4. *Living room*
5. *Bedroom*
6. *Storage*
7. *Ground-floor unit*
8. *Back garden*
9. *Commercial*
10. *Flex space*



SECTION A-A



SECOND-FOURTH FLOOR



GROUND FLOOR

Himmelb(l)au set the tone.

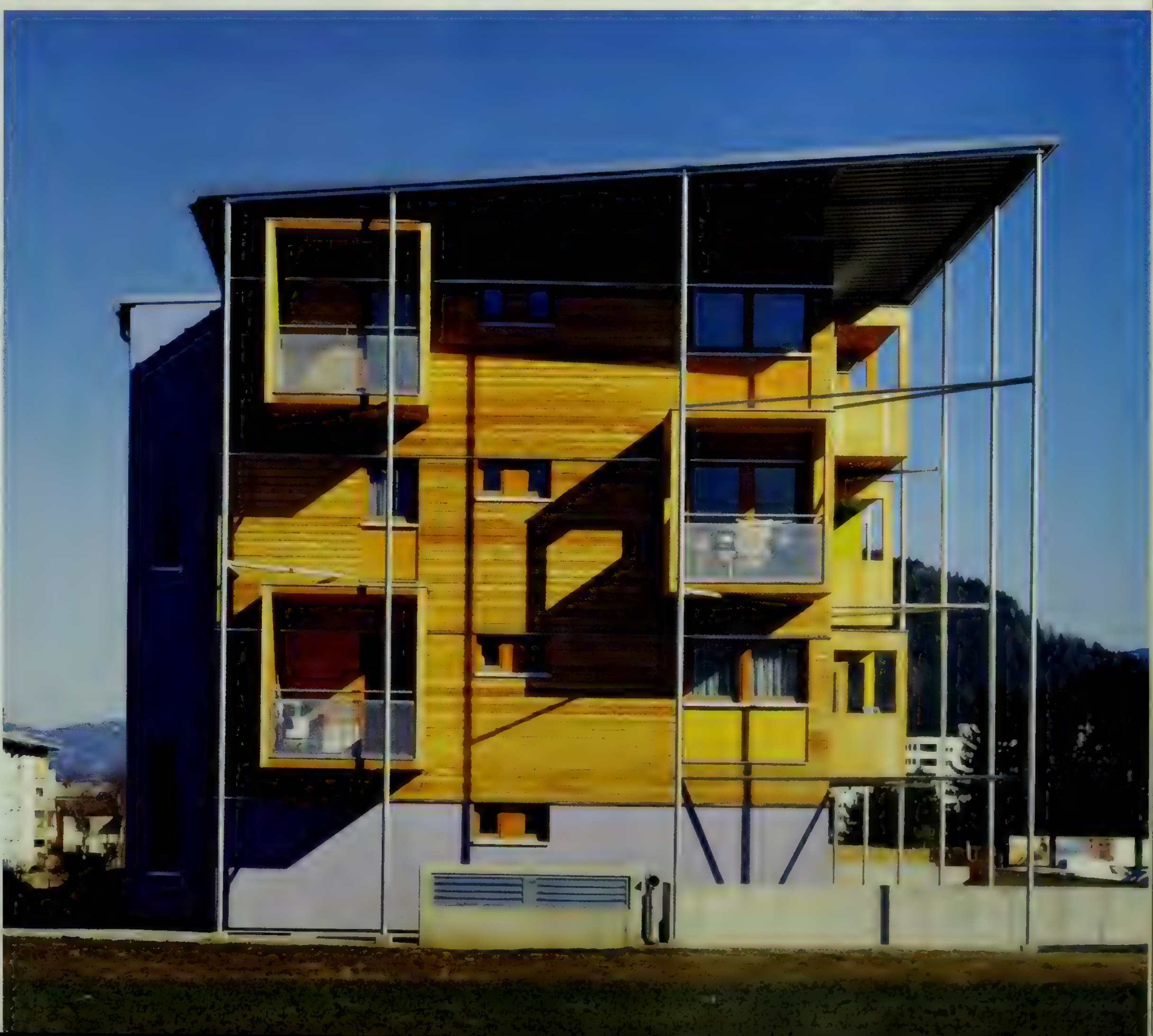
Carrying on the irreverent tone of the '60s, Hagmüller describes Judenburg West as a "Big Mac" with a street-level concrete garage serving as the bottom "bun" and a lightweight zinc canopy on top. In between, a wood-framed structure contains the apartments, which range from two-to-four-bedroom units. For floors and walls, the architects used prefabricated, cloth-laminated panels made from a strong evergreen wood, a material called KHL (Kreuzlagenholtz) that was developed by a Judenburg factory. The walls themselves are sandwiches made of a layer of KHL panels on the inside, untreated larch-wood cladding on the outside, and insulation and air in between.

To keep costs down, the architects designed the balconies as prefabricated elements made of KH that clip onto the building. Slender stainless-steel poles attached to the balconies stabilize the zinc canopy at the top of the building. The canopy functions as a kind of umbrella, protecting the untreated wood panels of the facade.

Unafraid to have some fun, Mack and Hagmüller imbued Judenburg West with a playful sensibility. With its polychromatic balconies dressed in orange, red, yellow, and apple green, and its elegant steel poles adorning the facades like fine jewelry, the building is decked out to the nines. Yet the architects created this effect using only simple, inexpensive materials.

Commentary

Clearly, Judenburg West is not run-of-the-mill social housing. It defies the color blindness affecting many Austrian architects today, designers who are busy cranking out derivative, aesthetically correct wood residences inspired by Peter Zumthor and other Swiss Minimalists. It is ironic that while these designers bend over backward to out-internationalize International Style architecture, a Southern California–based architect such as Mack out-Austrianizes the local Austrians. ■



mped-out porches
trude on the facade
an irregular pattern
some of the units.
metal roofing
tends over the wood
nels of the exterior,
tecting them like
umbrella. A network
slender, stainless-
el poles provides
orous structural
pport. A street-level
ncrete garage forms
foundation of the
r-story building.

Rag Flats
Philadelphia, Pennsylvania

3

WITH GEOMETRY AND COLOR, ONION FLATS CONCOCTS A SURPRISE MIX OF RESIDENCES BEHIND THE BRICK SHELL OF A FORMER RAG FACTORY.

By Jane F. Kolleeny

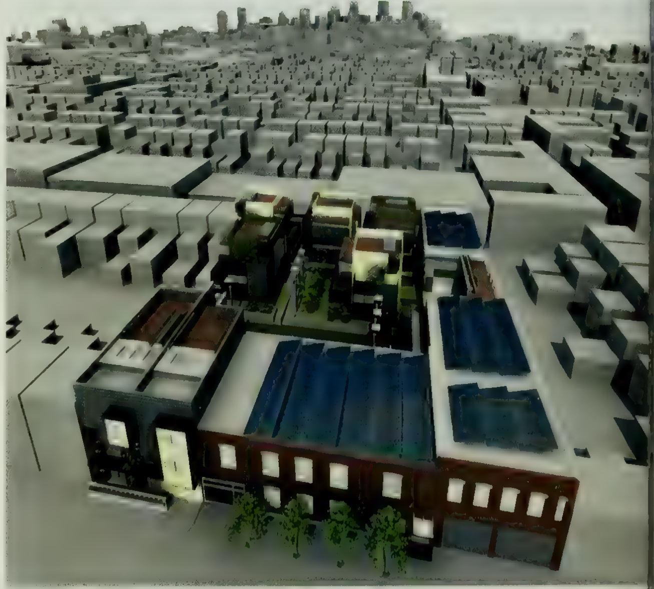
Architect/owners/builders: *Onion Flats—Patrick McDonald, Timothy McDonald, principals; Johnny McDonald, general manager; Kurt Schlenbaker, project manager/designer*
Architect of record: *Weber and Company Architects/Fink und Stange*
Engineers: *Amy Rivera (structural)*
Consultants: *Minus Studios (design/build collaborators); Cover (custom metal design/fabrication); Conservation Services Group (photovoltaic panel system); Kevin Wright, Juan Garcia (solar electronics); Evergreen Solar (solar panel manufacture); Anastasia Hudgins (landscape)*

Size: *25,000 square feet*
Cost: *$3.6 million*
Completion date: *2005*

Sources
Roofing: *Dex-O-Tex*
Wood windows and doors: *Weathershield; Pozzi*
Security: *Seidle Intercom system*
Kitchen cabinets/woodwork: *IKEA*
Paints and stains: *Duron*
Stained concrete: *Schofield*
Tile: *Dal-Tile*
Dumbwaiters: *Butler Mobility*
Radiant heat and water system: *Peerless*

For more information on this project, go to Building Types Study at **www.archrecord.com.**

Think with your hands, not your heads! That's the motto of Onion Flats, a Philadelphia architecture firm founded in 1997 by two brothers, Tim and Patrick McDonald, who were joined by architect/builder Kurt Schlenbaker in 1999. Converting rundown industrial sites into residential and mixed-use projects, the firm has so far completed three developments—Market Flats, Capital Flats, and Rag Flats—doing everything from designing, building, and selling to managing the properties. The practice has no offices; instead, the team goes beyond the drawing board, setting up shop on-site to experiment with built forms. To empower a younger generation of architects, they employ students from architecture schools of three Philadelphia universities where Tim McDonald teaches, and hire friends to handle work in other disciplines as needed.



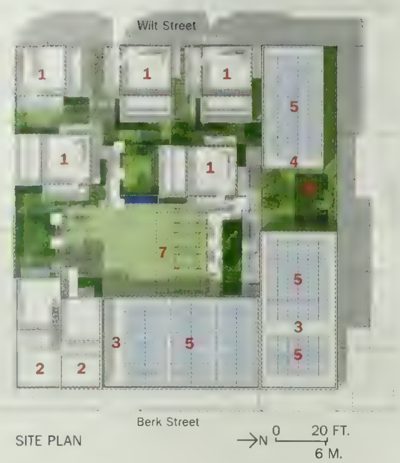
Program

Though the odor of fish has long since gone, the name Fishtown remains. It refers to an area in Philadelphia near the Delaware River where, in the 1830s, when ice refrigeration was a luxury affordable only by the rich, fresh catch was brought for pickling, salting, or smoking for the less-well-heeled. Today, it is a tightly knit working-class community, where ramshackle houses are passed down through generations of Irish Catholic families.

Here in Fishtown, Onion Flats saw an opportunity to build 11 multifamily housing units in and around a former rag factory. Combining four kinds of dwelling units on the site, the McDonalds purchased the two-story facility from a local masonry contractor and cleaned it up. "The abandoned factory had been used as a dump for 10 years and was occupied by a family of feral cats," says Tim McDonald.

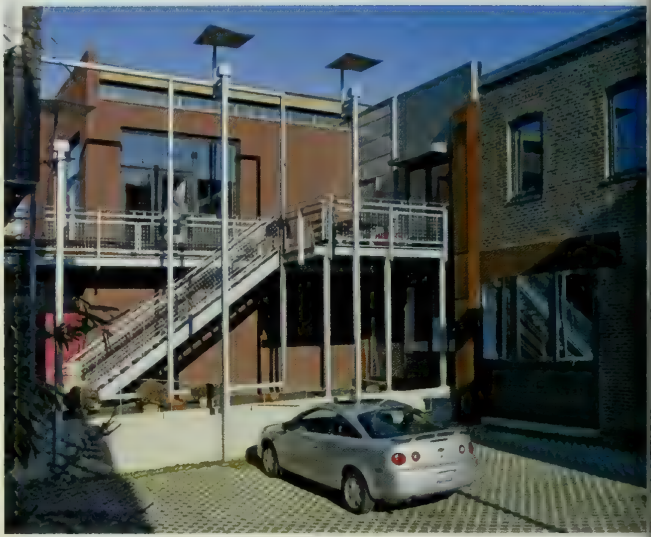
Solution

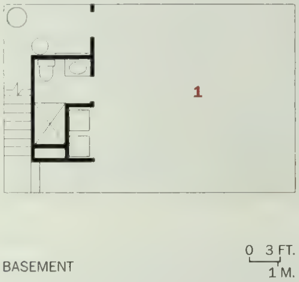
The factory's shell served as a starting place for various types of dwellings. The original rough-hewn red brick became the front and side walls of two lofts, with two row



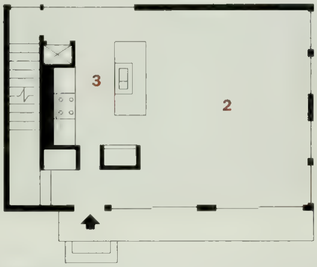
SITE PLAN

An interior courtyard of honeycomb-patterned paving blocks with grass peeking through the cracks provides parking. Switchback stairs give access to upper floors (right).

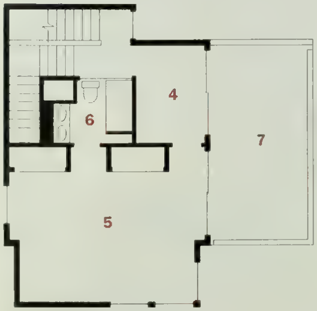




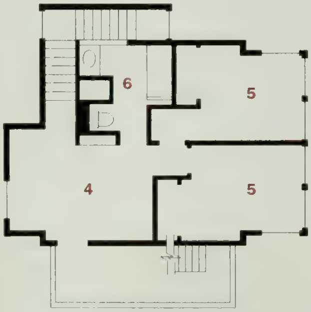
BASEMENT



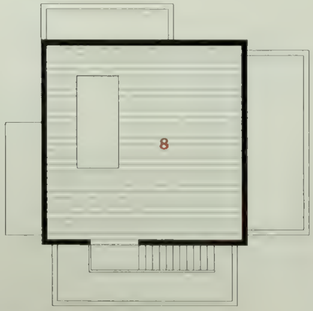
FIRST FLOOR



SECOND FLOOR



THIRD FLOOR



ROOF FLOOR

TRINITY UNITS

1. *Den*
2. *Living room*
3. *Kitchen*
4. *Study*
5. *Bedroom*
6. *Bath*
7. *Terrace*
8. *Roof deck*

houses also on the street-facing side, and a single one-story pavilion and five three-level units filling out the back portion of the site. Called Trinities, the three-story units are one of Philadelphia's most characteristic residential building types. Onion Flats' version of the Trinity stacks the floors irregularly, bumping them out on various sides to add space and open up the walls to insert windows and skylights that bring light into the interiors. "The units were designed so one would rarely need to turn on a light," says the architect.

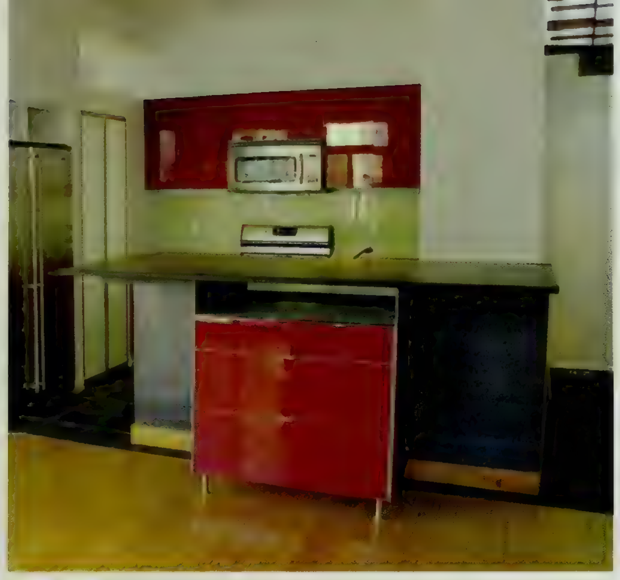
All 11 units are set around an interior courtyard of bamboo gardens and a parking lot laid with attractive turf pavers. Six photovoltaic cells generate 70 to 100 percent of the electricity for the complex, giving the project a strong green ethos. An underground cistern collects rainwater that is distributed for all nonpotable uses. Shared spaces include a green roof, a community garden, a composting area, and a gym.

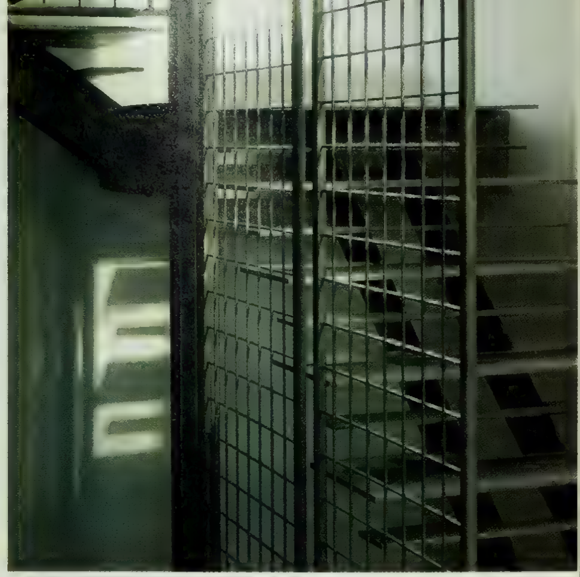
To maximize the efficiency of the 20-by-20-foot Trinities, the architects designed the roofs as outdoor living rooms, equipped with phone jacks, Internet connection, electricity, gas, and a dumbwaiter that transports refreshments for rooftop gatherings. The two row houses—designed by Minus Studios, a frequent collaborator with Onion Flats—face the street and are sandwiched between the factory wall and row houses on an adjacent property. Cantilevered elements on the front-facing bedroom provide space for reading nooks, while rear-facing bedrooms feature balconies. Switchback staircases fl over the courtyard, and accessible roofs supplement shallow backyard

The architects clad the buildings with black-stained, cedar tongue-in-groove panels, alternati with corrugated metal, stucco, and Cor-Ten steel. Inside, bamboo floor Pennsylvania-slate countertops and tiles, eucalyptus cabinetry, an ceiling fans give the apartments a comfortable, Modern look. Custom designed steel stairs and bridges both inside and out were fabricate by team members in the welding and wood shops set up temporaril on the premises. Onion Flats assigned small projects to its student employees as part of its mentoring program. "We would giv a student the project of designing door, and then they own that proje It's a very good way for them to bu confidence," said Kurt Schlenbake

Commentary

Rag Flats shows how a small proje can make a difference in a struggli community. Instead of tearing dow Onion Flats rebuilt, demonstrating how sustainable design, hands-on architecture, and community enga- ment can provide the kind of diver housing needed to turn around a neighborhood in transition. ■





ne of the kitchen
inets are composed
deep burgundy
ymer laminate (top
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site allow natural
t to penetrate the
eriors (top right). The
units are centered
und a courtyard
h bamboo gardens.
gant light fixtures
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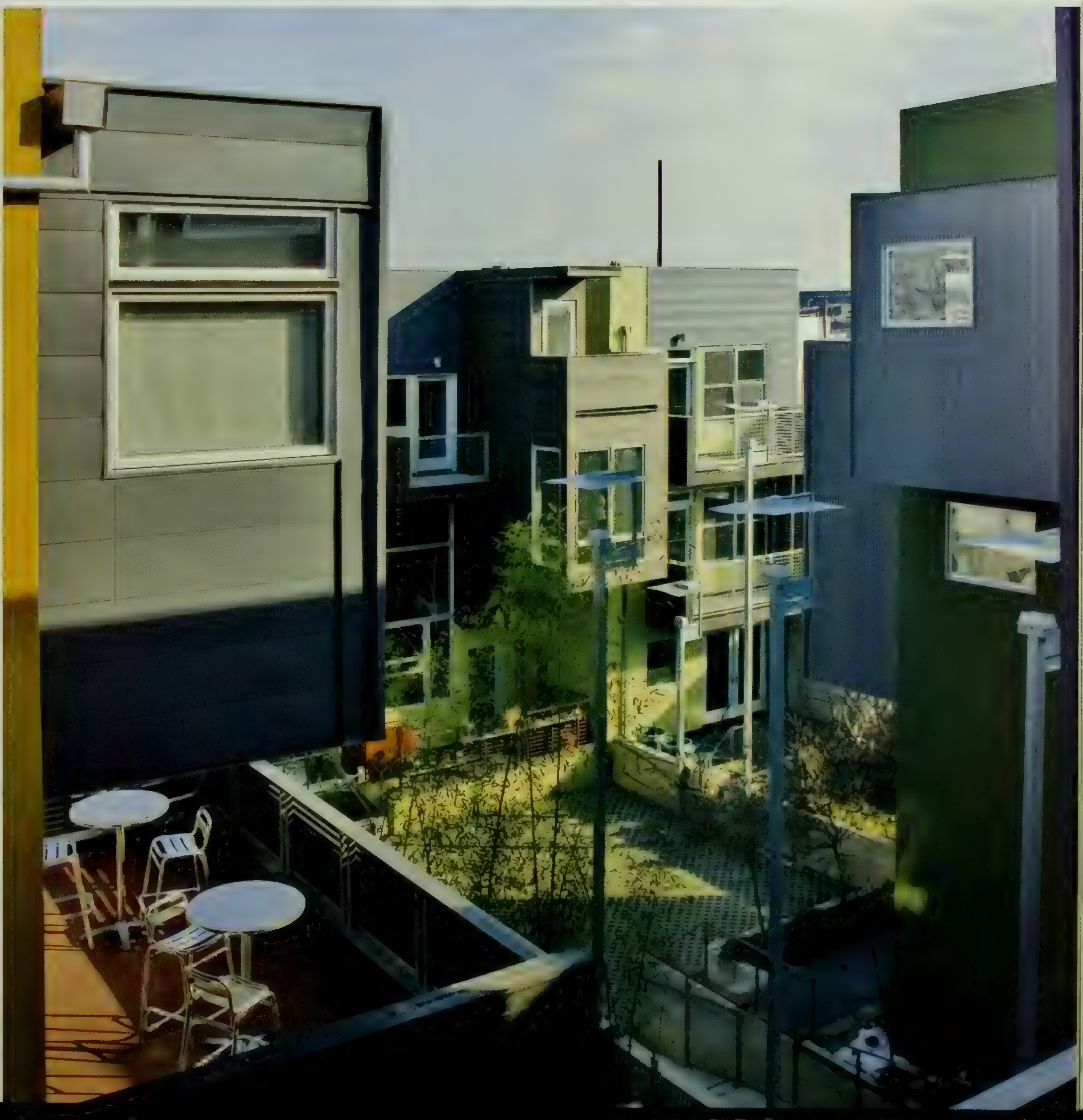
ximize the use of
outdoors, achieving
ense of community
in the shared space
he courtyard (right).



K Lofts
San Diego, California

4

USING A SERIES OF UNIQUE GEOMETRIC ELEVATIONS, JONATHAN SEGAL ARCHITECTS DEVELOPS NINE UNITS OF MODESTLY PRICED HOUSING.

By Allison Milionis

Architect: *Jonathan Segal Architect—Jonathan Segal, Wendy Segal, Guillermo Tomaszewski, Greg Yeatter, Luke Henderson, Steve Money-Miles, Mark Dakuna, project team*
Owner: *Jonathan Segal Architect, FAIA*
Engineers: *Mobayed Consulting Group*
Consultants: *Ivy Landscape (landscape)*

Size: *7,800 square feet*
Cost: *$985,000*
Completion date: *2005*

Sources
Windows/entrances/sliding doors: *International Aluminum Windowmaster*
Skylights: *Bristolite*
Cabinet hardware/woodwork: *IKEA*
Paints/stains: *Frazee; Dal-Tile*
Carpets: *Flor Carpet*
Lighting: *Halo*

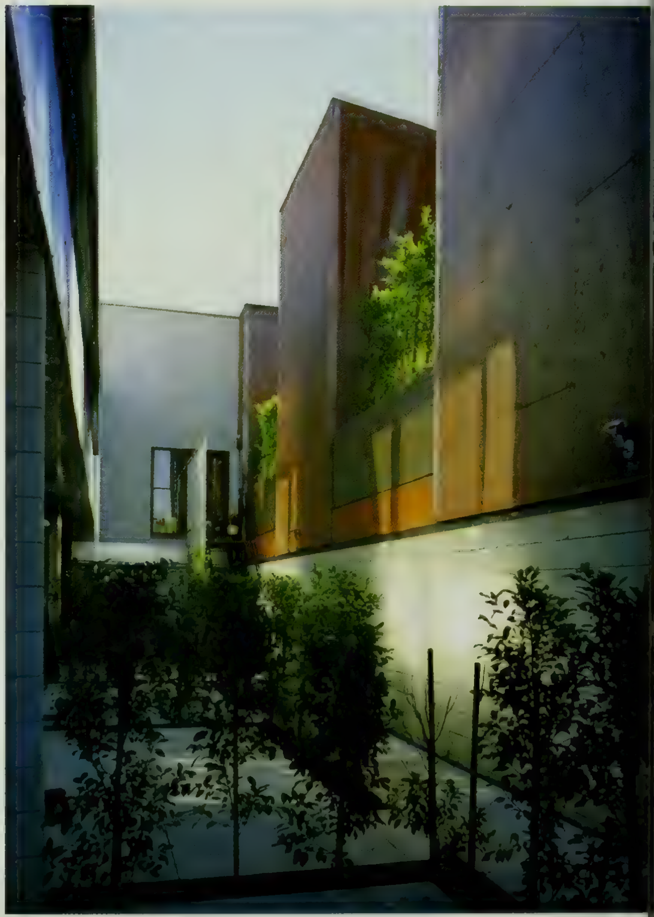
For more information on this project, go to Building Types Study at **www.archrecord.com**.

San Diego's Golden Hill neighborhood displays a colorful history of architectural styles, with Victorian, Colonial Revival, and Craftsman-style houses, as well as modest bungalows, 20th-century apartment buildings, and low-rise commercial structures lining its wide streets. For many years, Golden Hill had been deteriorating, as residents moved to the suburbs. But in recent years, professionals and young families have started returning to neighborhoods like Golden Hill, eagerly buying up historic houses with wide porches and expansive yards. But with few of these old houses left on the market, demand has been growing for innovative multifamily alternatives.

Program

San Diego architect, developer, and builder Jonathan Segal, FAIA, has been an active player in revitalizing a number of downtown San Diego neighborhoods [see RECORD, July 2005, page 146; January 2003, page 180] and envisions Modern apartment complexes merging seamlessly with Golden Hill's historic single-family homes. An expert at urban infill who has completed 19 housing projects in the city, Segal purchased a corner lot on Golden Hill, where an abandoned convenience store and parking lot stood.

Allison Milionis writes on architecture and design for several magazines.



With only 9,000 square feet to work with, including the existing building, Segal proposed an apartment complex with a street-level garage and a small commercial/retail space. By allocating one dwelling unit as a low-income rental, he qualified for a building bonus of two additional market-rate units, which pushed the total number of apartments to nine. Although the city approved his plan, it didn't give him the necessary variance to include the retail space, a big disappointment for Segal, who champions mixed-use development.

her than tearing
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two-story dwelling
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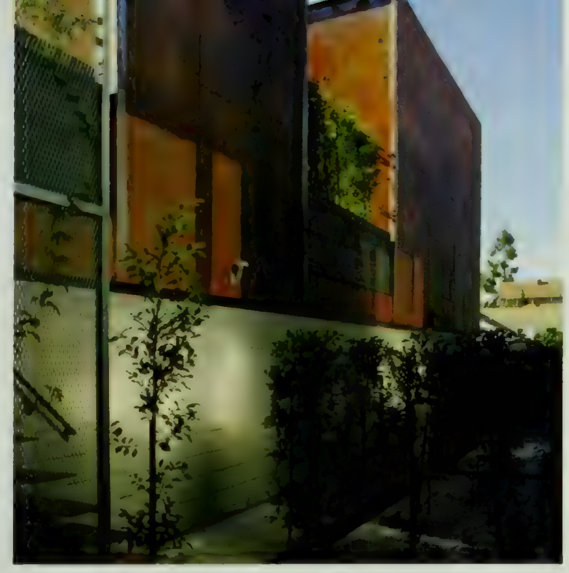
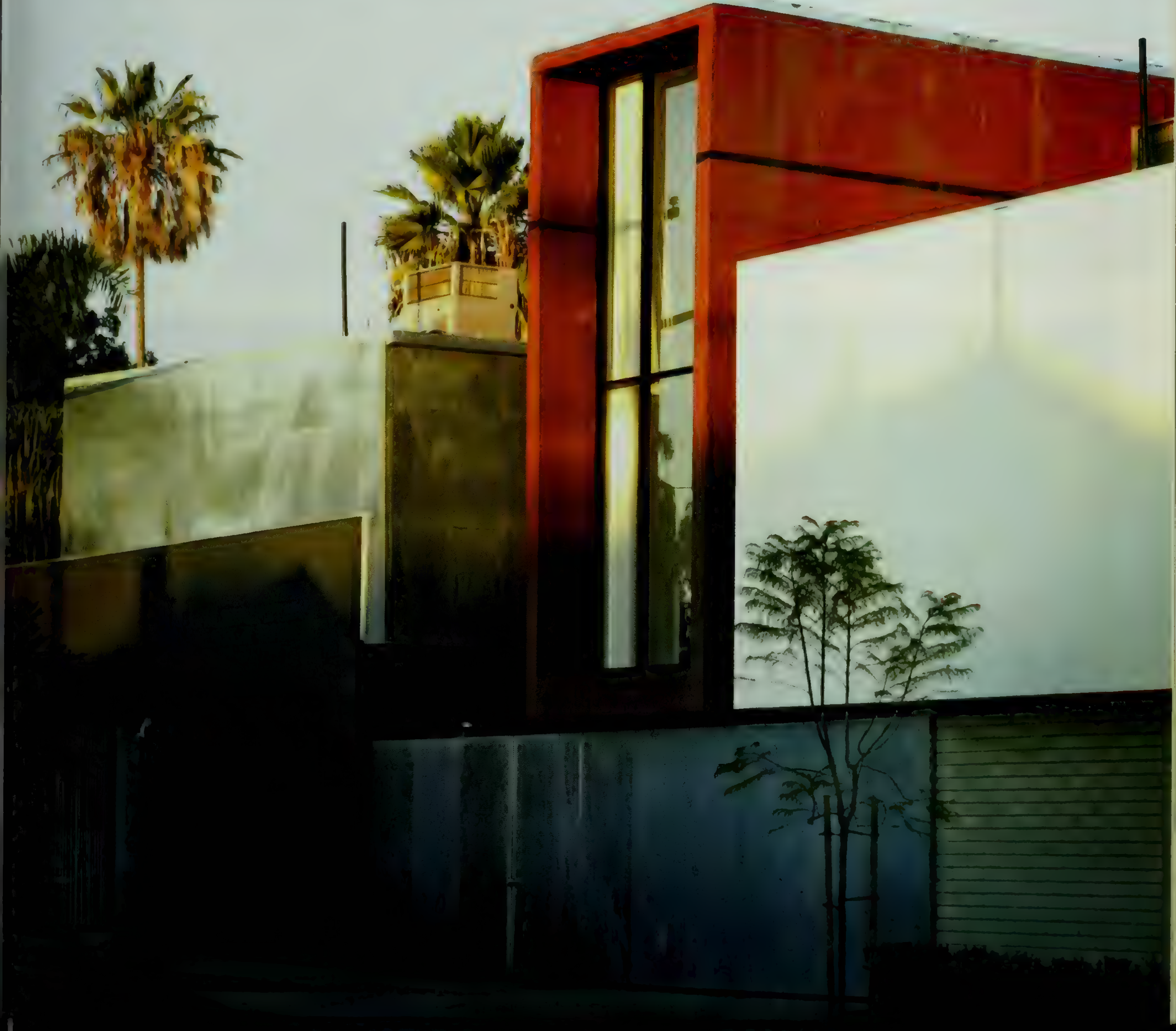
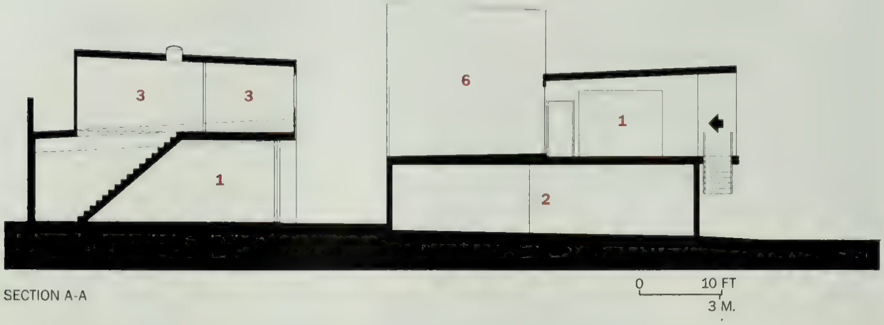
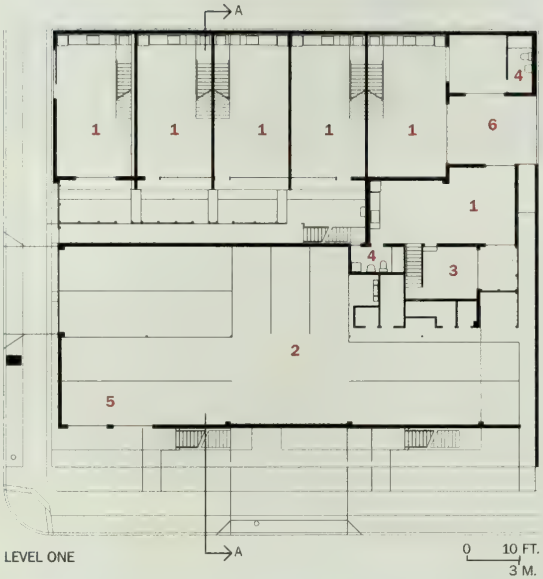


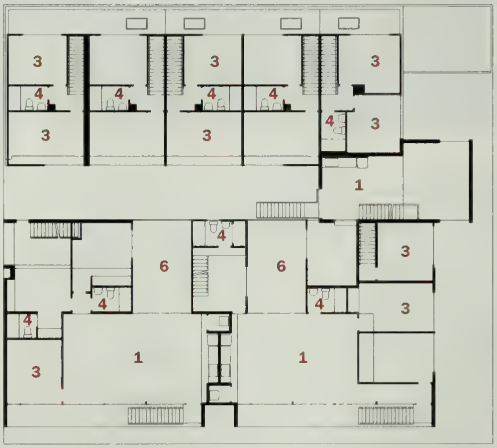




SECTION A-A

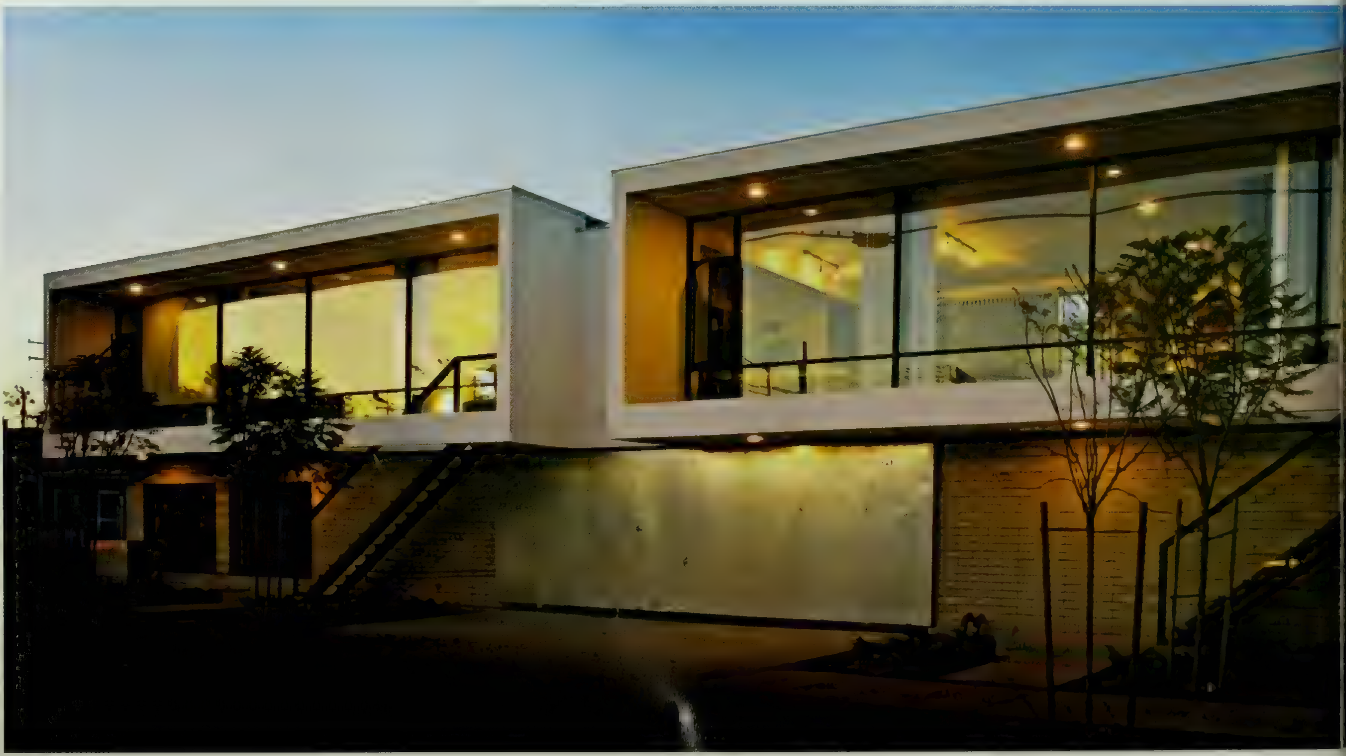


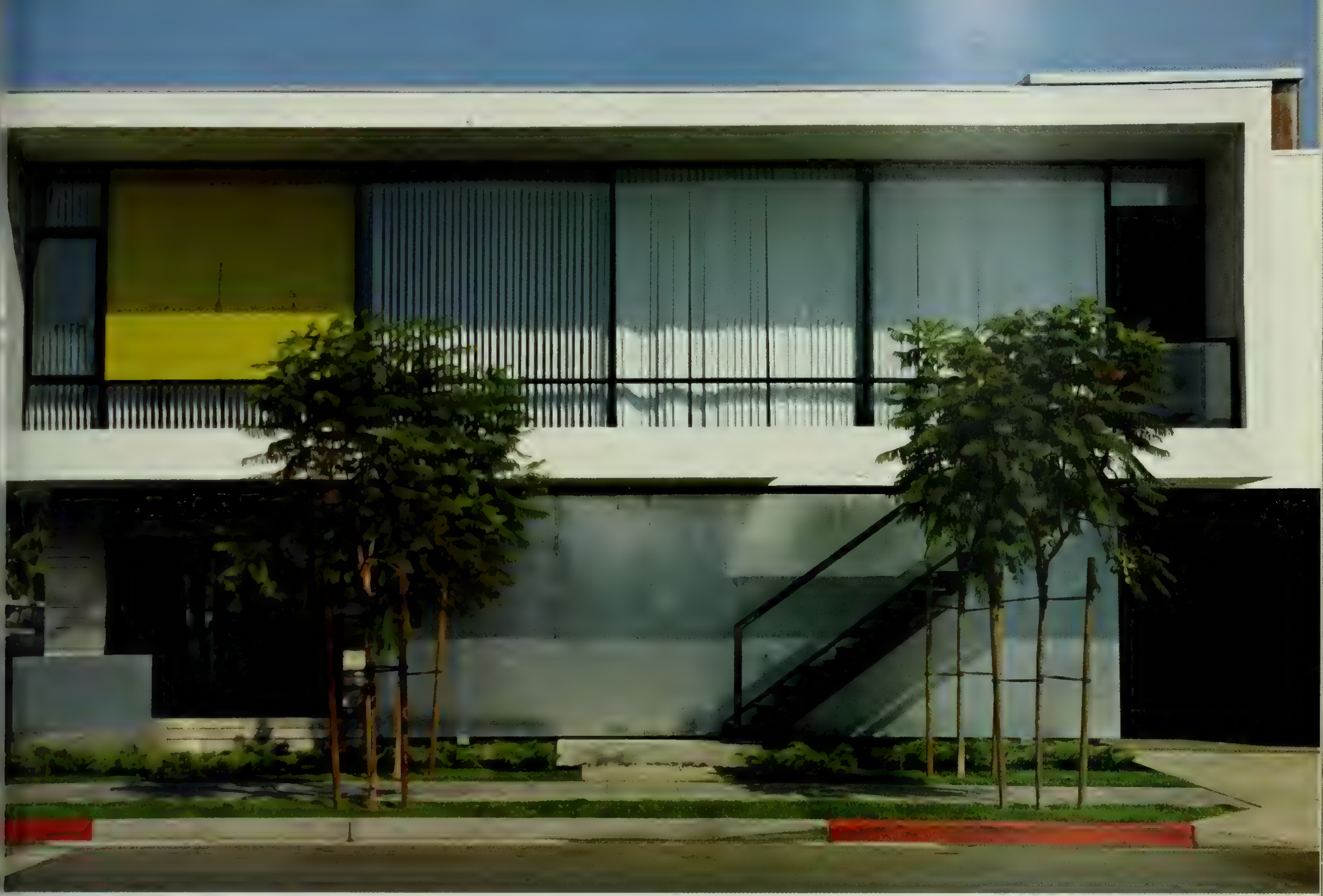
LEVEL ONE



LEVEL TWO

1. *Kitchen/living/ dining*
2. *Parking*
3. *Bedroom*
4. *Bath*
5. *Retail*
6. *Patio*





hite box houses
units and serves
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complex. Sitting on
of the garage, it
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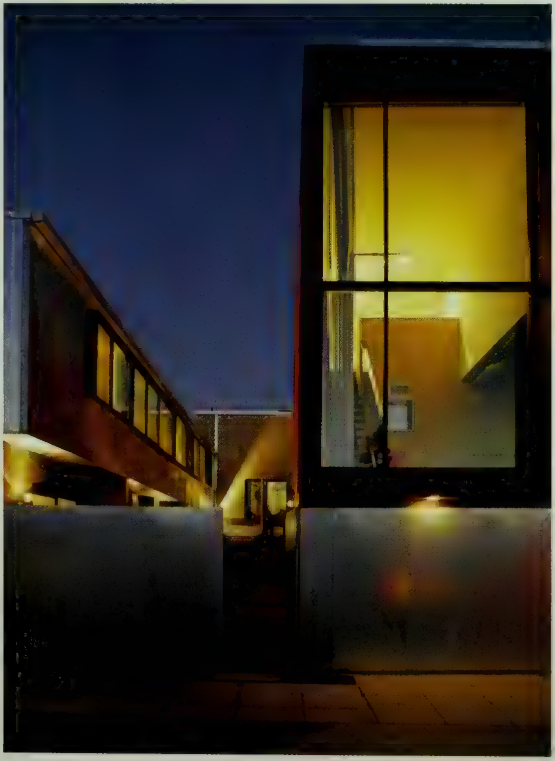

Solution

Rather than tear down the old building, Segal opted to use the structure, saving nearly $80,000 in demolition and construction costs. "It's good for the environment, it's good architecturally, and it's good for us, financially," he said. He removed the existing roof and rebuilt it to support a second story, then inserted five two-story dwelling units into the original structure. Four of the five apartments feature the same basic layout: an open ground floor with a kitchen and adjacent outdoor patio, a custom-made steel stairwell along the interior wall, two small bedrooms, and a bathroom on the second level. The fifth unit differs slightly in that it includes a ground-floor bathroom and multipurpose room that can double as a dining room.

Two separate structures with their own identities—one a steel-clad tower, the other a horizontal white box—house the remaining four units. The tower contains two bilevel units with plans resembling those of the adjacent five. The whit box, however, serves as the showpiece of the complex. Sitting atop the garage, it hovers above B Stre a wall of floor-to-ceiling glass revea ing an open interior of white walls and minimal detail. Segal plays wit color on this elevation, and while h resists the reference, the geometri patterns of glass panes, black mol ings, and primary colors recall a Mondrian painting. Both units in th white box contain three bedrooms and two baths, as well as a spacious outdoor terrace off the back.

Simple, off-the-shelf interior elements reduced costs (left). Each apartment contains a custom-designed steel staircase with a glass railing (below).

Segal was able to keep construction cost to just $82 a squar foot by using his own crew to fram skin, and waterproof the apartments, as well as install windows, kitchens, and cabinetry. Simple, of the-shelf interior materials, such a easy-to-install carpet squares, als reduced costs. A custom-designed steel staircase with a glass railing enlivens each apartment, but Segal was able to build it for just $3,000 by using his own workers. Inexpensive exterior finishes, such as painted concrete, stucco, and exposed, naturally rusting steel plates, give definition to the building's different volumes and levels and create unique compositions fo each elevation.

Commentary

Although it stands out from its cen tury-old neighbors, and some loca residents criticized it when it opened, K Lofts fits well with the scale of the area, and provides a necessary dose of mixed-income housing. Indeed, as part of his strategy of integrating old and new market-rate and subsidized, Segal doesn't disclose which unit is "affordable." And a tour of the com plex doesn't easily reveal the answer, as each apartment enjoys equal footing in terms of design ar amenities. By working this way, Segal is building a community, not just a housing complex. ■

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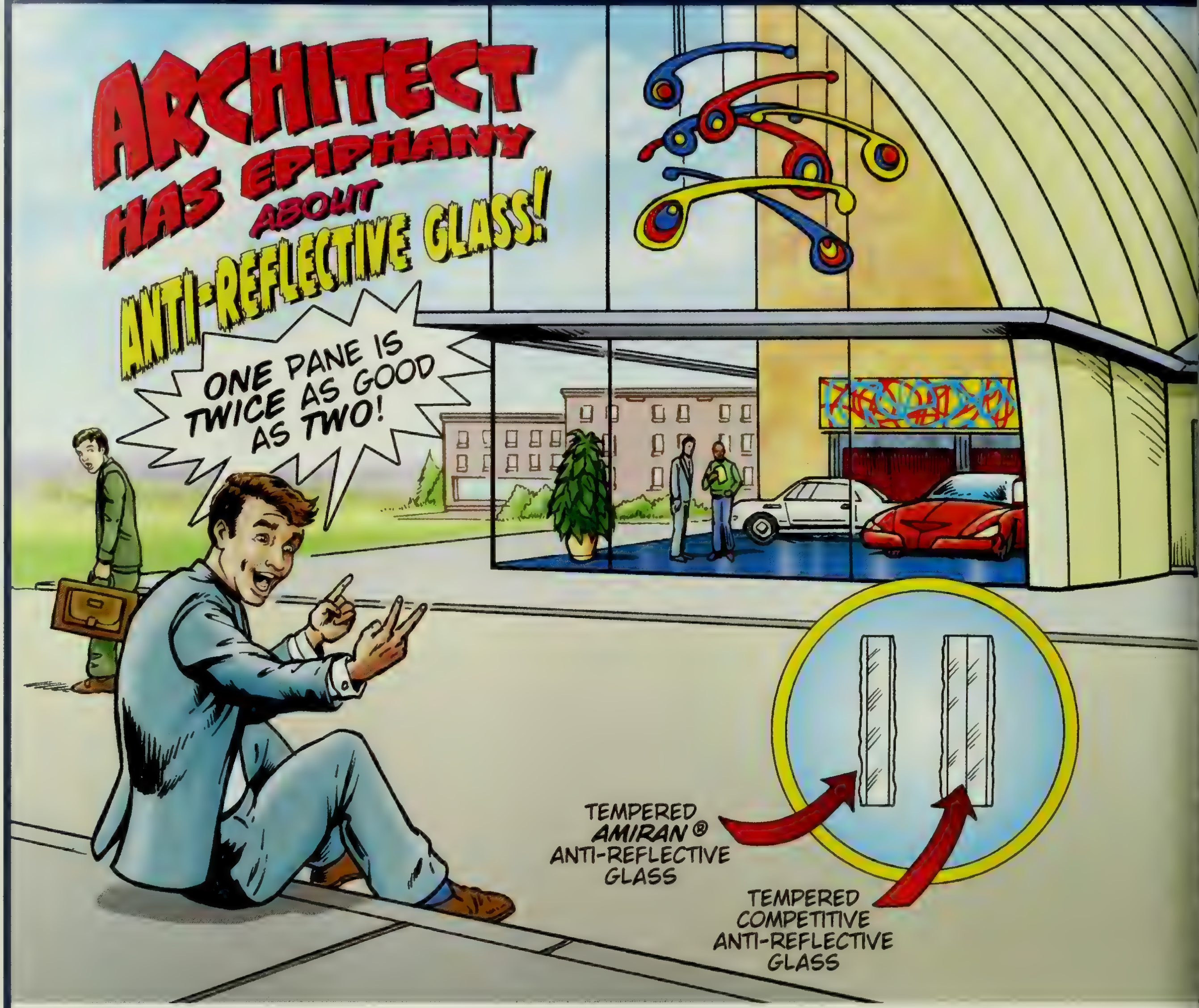
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lew Technologies Create New Challenges

TH THE CURRENT EMPHASIS ON TECHNOLOGY AND SUSTAINABILITY, ARCHITECTS AND RESEARCHERS LY ON BUILDING PROCESS TO MANAGE THE FLOOD OF PRODUCTS, MATERIALS, AND OPTIONS

Sara Hart

3uilding *process* is a vague concept with multiple definitions, but it drives every architectural project. It usually refers to the methodology, often inventive and personal, that the architect relies on to steer a project from concept to completion. Process ıtrinsic and subjective, so it remains largely an abstraction when evalng the finished product. Problem-solving, fact-finding, iteration, gration, intuition, and judgment are elements of process. It reconciles ıgn and construction in practice, but it also guides research out of the ›ratory and into the marketplace.

researcher

n E. Fernandez is an associate professor of Design and Building hnology in the Department of Architecture at the Massachusetts itute of Technology (MIT). As a member of the building technology gram, Fernandez conducts applied research, as opposed to the fundantal or theoretical kinds. In other words, the purpose of every estigation is not a series of isolated inquiries in which random mates are selected and tested, but rather the arduous search for commercial lication. As Fernandez notes, "Prototypes are the end result in a lot of earch, which often means they're never heard of again. Applied earch is slow, but hopefully the findings are permanent." (All students he department at MIT are expected to participate in a research project requirement of degree completion. Teams are typically made up of rdepartmental faculty and students.)

In building technology research, the work is goal-oriented: How you join two materials? How do you then attach them to a building? at properties must be added to an existing material to make it viable? d so on. Fernandez argues that our knowledge base must be expanded to lude advances in materials science and engineering. He concedes, however, that "the diffusion of innovation" in the construction industry is slower than in comparable industries. Be that as it may, the irony is that architects and engineers are more focused on new materials and technologies today than they have been in half a century.

Fernandez has been directing research focused on emerging and nontraditional materials (including natural and synthetic fibers, new laminated glass assemblies, and textile building enclosures), innovative architectural assemblies, sustainable materials, and the technical and design opportunities offered by the continuing exploration of contemporary materials. As the principal investigator for the "Multi-Layered Composite Fabrics Research Project" at MIT, Fernandez explored the commercial potential of textiles as they might be introduced into conventional building systems, particularly facades.

The design and construction of glass-and-metal building envelopes is well established and time-tested within the construction industry. Their performance is reliable and predictable. These building systems are generally made up of rigid, orthogonal, unitized components, the sizes of which are generally limited to what workers can move into

Architecture firms Lake/Flato and BNIM collaborated on a model of sustainable design for the Nursing School/Student Center at the University of Texas.

CONTINUING EDUCATION

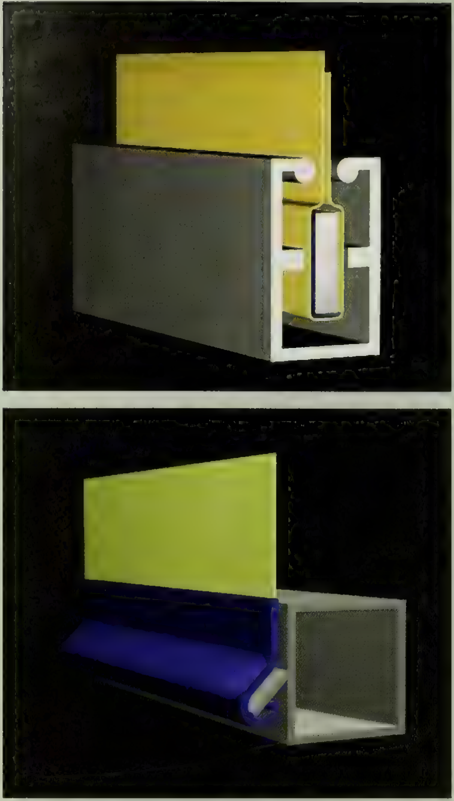
Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 136 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

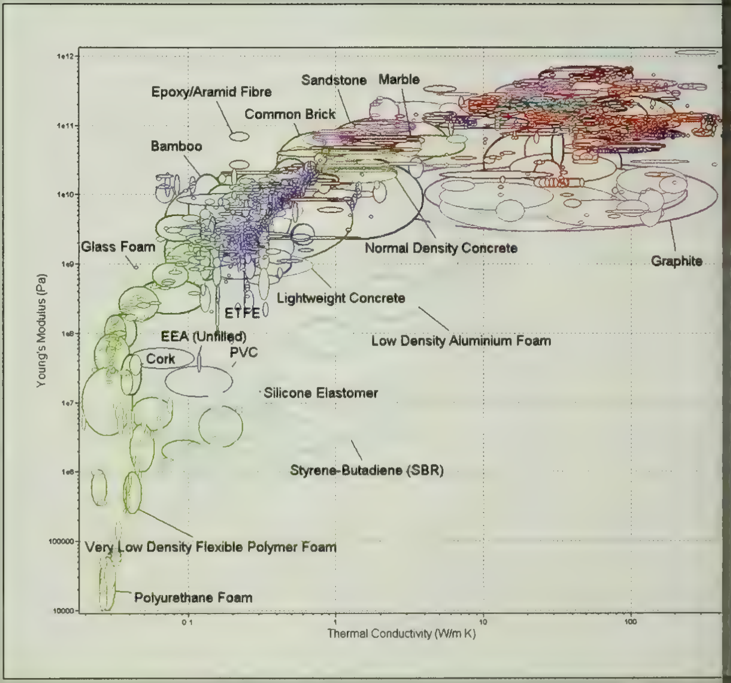
1. *Describe a project that uses applied research with nontraditional materials.*
2. *Discuss how technology transfer benefits the building process.*
3. *Describe a project where the process is driven by sustainable practices.*

this story and more continuing education, as well as links to sources, ite papers, and products, go to **www.archrecord.com**.



John Fernandez's research into multilayered composite fabrics at MIT included an in-depth investigation of the detailing required to continuously restrain fabric material in order to avoid stress concentrations and unnecessary and intrusive fasteners.

This type of chart (below) is useful in research for describing the thermal conductivity for a variety of materials in relation to their tensile elastic modulus.



position and then join together and attach to a structure. While this method of enclosing structures has been the standard for decades, Fernandez has been studying the rapid ascent, within the field of polymer science, of the development of high-performance textiles. His findings have been published in *Material Architecture: Emergent Materials for Innovative Buildings and Ecological Construction* (Architectural Press, an imprint of Elsevier, 2006).

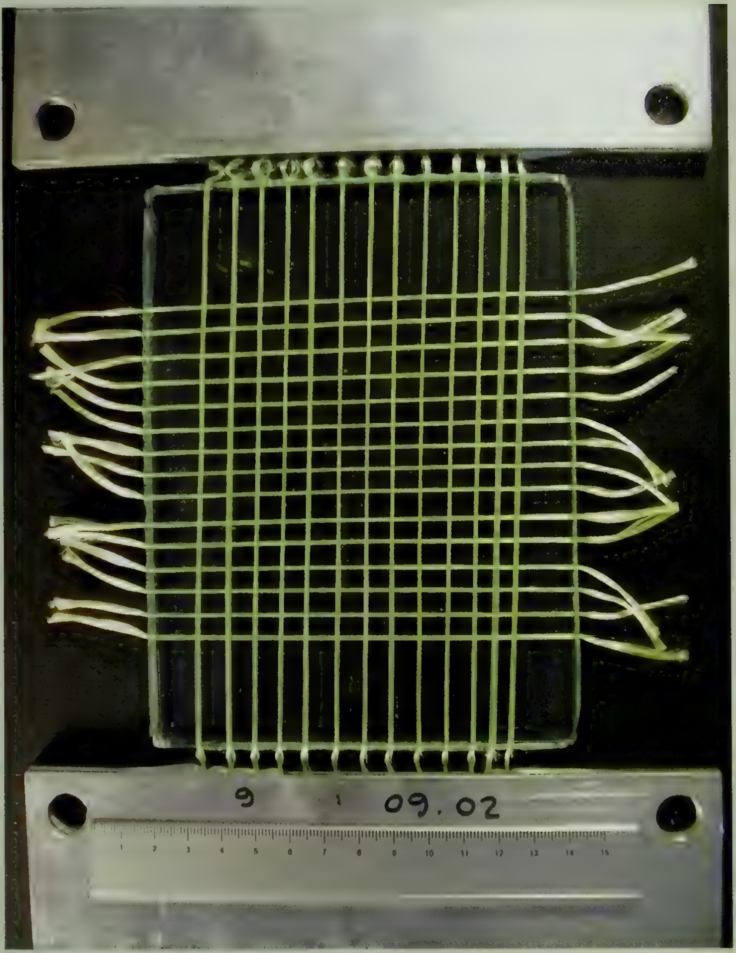
Fernandez chose to explore his thesis, using materials already on the market. Finding a manufacturer to sponsor academic research takes time. After completing a white paper outlining the scope of his research, Fernandez spent a long 18 months making presentations to potential sponsors. In the end, he convinced Gore-Tex, a leader in composite textiles, to supply a dozen rolls of material for testing. Its technology is based on expanded polytetrafluoroethylene (PTFE)—better know as Dupont Teflon, and other fluoropolymer products. Whereas these products are now associated with waterproof, protective outerwear, Gore-Tex fluoropolymer products were originally meant to provide innovative solutions for next-generation cable assemblies for electronics, medical implants, and use with high-performance fabrics. Gore membranes have most of the characterist required of building envelopes: moisture vapor permeability (breathabilit but low water absorption; a high strength-to-weight ratio; low flammabili chemical inertness; and good weathering properties. In other words, t products were a perfect candidate for Fernandez's investigation.

Fernandez identified two obstacles in the way of a direct te nology transfer. First, he had to consider the performance implicati when a material is implemented in multiple layers; and secondly, how detail the joints and restraints. With regard to the latter, Fernandez insi that there's a great deal of precedent in sailboat technology and existi tensile fabric structures to inform restraining techniques. Examp include Nicholas Grimshaw's ETFE pillows for the Eden Project a Richard Rogers's PTFE-coated Millennium Dome.

In an important development, experiments with those meth of curtain-wall assembly using textiles required in-depth reconsiderati of the detail morphology, which typically defines rigid, orthogonal co ponents. Textiles are strong in tension and ineffective in compression, a very precise approach to connections is required. Also, nonstructu

In tests at MIT, textiles were laminated to glass and attached to aluminum plates to test failure behaviors (left).

Different kinds of fiber weaves and grids (below) were introduced to provide a range of tensile strengths.



tiles, the kind of system Fernandez is most interested in, cannot com- tely prevent the movement of the exterior surface of the fabric caused the gusting of wind, for instance.

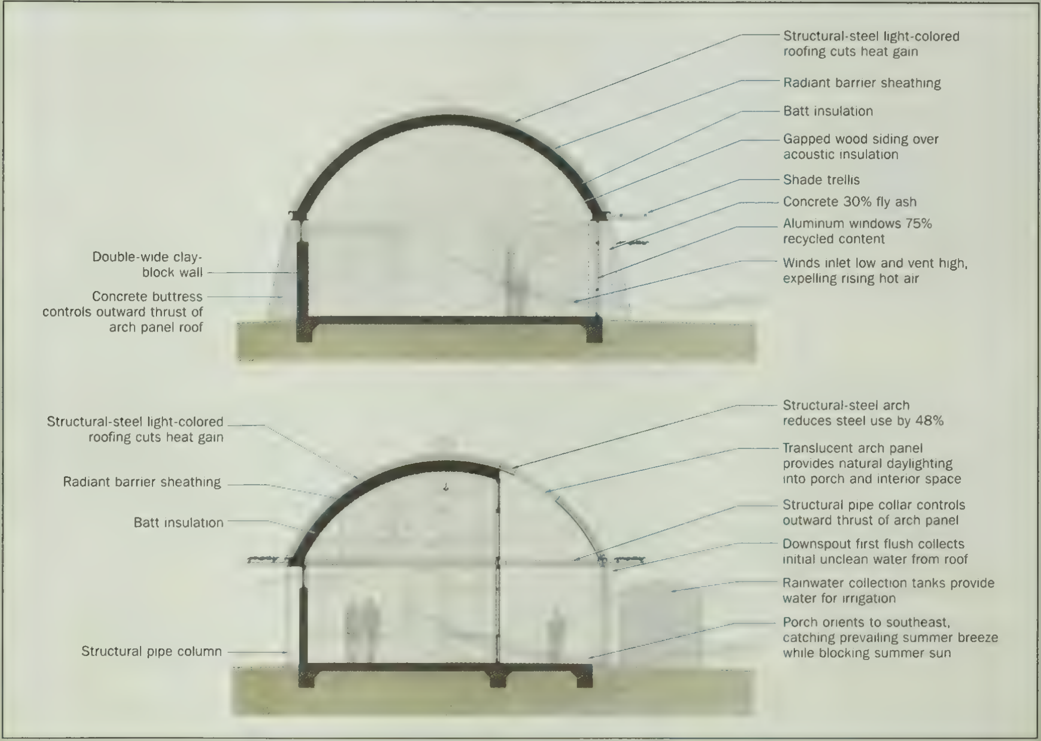
This condition led to the use of details that restrain textiles ntinuously along each edge. The most commonly used techniques are und in sail technologies; these use a cable or compressible filler (such a neoprene or other high-density polymer) around which the fabric is apped and then slipped into a slotted metal tube. Most mainsails are strained along their vertical edges in just this way. Other techniques o use an edge cable restraint and reinforced panels with embedded rbon and higher-strength fibers anchored back to points of restraint the structure.

Detailing multilayered fabrics in this way changes the nature of e building design process. Designs can attempt a continuous textile sur- e employing a variety of textiles (Teflon-coated PVC, glass fibers, aramid tiles, for example). This is achieved by splicing together the edges of ese various materials and restraining the assembly with an aluminum mework set at the edge of the slab. Because textiles can extend many hundreds of yards, the framework can be placed infrequently—only where it is needed at corners and other geometric discontinuities.

Another approach uses the notion of "scales" of fabric to cover the exterior surface of a building. Again, these areas of textile-covered wall are restrained in tension and brought back to the structural support of the building using an intermediate aluminum framework. However, in this case, the scales are more easily adapted to various configurations to respond to the changing conditions of the seasons and the daily needs and preferences of the occupants.

The governing principle behind assembly says the material should be continuous—or put another way, employ as few cuts as possible, in order to avoid intrusive fasteners. The benefit of textiles is that they can be continuous. Prefabrication allows for rolls up to 300 yards to be delivered to the site and attached with continuous channels. Fernandez concluded that it would be possible to close a building in one tenth the time of a conventional glass-and-metal frame assembly. The next step is to find a proof-of-concept opportunity (and validation of process) with a real client and project. Fernandez is looking for a commercial office building in

Barrel-vaulted spaces at the World Birding Center allow for long spans and maximum water collection on a contaminant-free metal surface. A large, vented attic space forms a protective air buffer for the spaces below and includes R-30 insulation. Large gravity vents at the ridge exhaust hot air without the use of motors by drawing air in from continuous vents at the eaves and end gables.


Structural-steel light-colored roofing cuts heat gain
Radiant barrier sheathing
Batt insulation
Gapped wood siding over acoustic insulation
Shade trellis
Concrete 30% fly ash
Aluminum windows 75% recycled content
Winds inlet low and vent high, expelling rising hot air
Double-wide clay-block wall
Concrete buttress controls outward thrust of arch panel roof
Structural-steel light-colored roofing cuts heat gain
Radiant barrier sheathing
Batt insulation
Structural pipe column
Structural-steel arch reduces steel use by 48%
Translucent arch panel provides natural daylighting into porch and interior space
Structural pipe collar controls outward thrust of arch panel
Downspout first flush collects initial unclean water from roof
Rainwater collection tanks provide water for irrigation
Porch orients to southeast, catching prevailing summer breeze while blocking summer sun

which 85 percent of the envelope construction would be traditional, while the remaining sections would consist of textile.

The practitioner

In contrast to Fernandez's applied research into nontraditional materials, San Antonio–based architects Lake/Flato's work relies on established materials and traditional methods of construction. On a stylistic level, the firm fuses down-home Texas practicality with a Modernist vocabulary, as shown in the two projects presented here. But at a deeper level, the process is driven by a commitment to sustainability principles and practices. The Lake/Flato method, however, does not rely on a checklist of independent, quantifiable sustainable features. Instead, its success comes from combining and overlapping these features, thus activating additional benefits that the architects control. In other words, Lake/Flato seeks a whole that is greater and greener than the sum of its LEED-approved parts.

The firm often wins commissions for projects that introduce man-made structures into environmentally fragile areas. In one unusual case, the Texas Parks & Wildlife Service commissioned the firm to design headquarters for the World Birding Center on a site adjacent to th Bentsen Rio Grande State Park in Mission, Texas, a major flyover path fo local and migratory birds. At one time, the site was fragile. Then it was decimated. As principal David Lake, FAIA, recalls, "Over the decades, colonial attitude prevailed, and the Lower Rio Grande Valley was clear-cu for agricultural purposes to the point where less than 5 percent of the natural habitat remained." Although this deforested area might not b impregnated with the contaminants necessary to qualify the site as brownfield, Lake says they viewed what once was a rich river delta, now a old onion field, as if it were one.

The design process was then driven by methods of restoratio and reclamation in which the buildings assumed a supporting role. A flooded garden dominates the arrival zone. This garden is a demonstratio habitat, which exhibits the characteristics of the naturally flooded delta tha once dominated the area. Arbors, a native plant restoration nursery, a Texa Ebony shade garden, and several bird habitats are all part of the master pla to restore the area's ecosystem.

With priorities focused on the land, the architects pursued form

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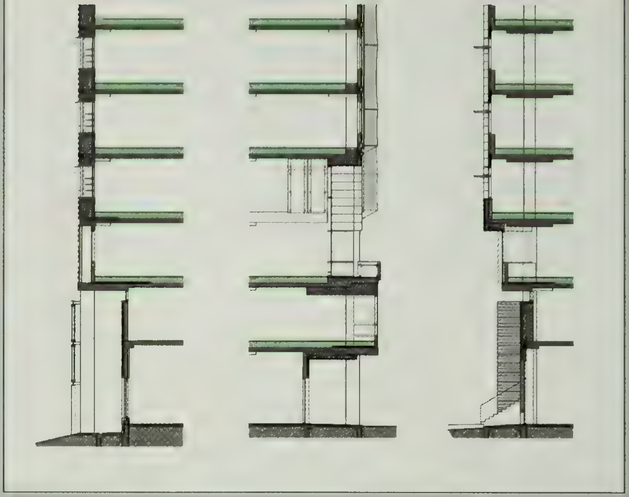

The sophisticated building envelope at the University of Texas Nursing School/Student Center is tuned to respond to the climatic conditions of Houston, from the percentage of glazing used on each facade to the design of shading devices. The glazing is spectrally selective with a low-E coating and a low-U value. Users have control of the thermal environment through operable windows and adjustable airflow controls.

and construction methods that tread lightly so as to do no harm and relate to the ad hoc architectural customs of the valley. Local farmers traditionally cluster buildings to create tree-shaded "comfort zones" for their houses. The visitors' center is composed of three main structures, housing interpretive exhibits and multiuse space, administrative offices, a gift shop, and a café. The three structures are clustered in such a manner as to control shaded areas and garden spaces. They're oriented on an east-west axis, parallel to an irrigation canal on the south, in order to capture the prevailing summer breezes. The buildings face south, east, and west to block the summer sun; on the northern side, vision glass provides views into courtyards and vistas beyond.

THE ARCHITECTS PURSUED FORMS THAT TREAD LIGHTLY SO AS TO DO NO HARM AND RELATE TO THE AD HOC ARCHITECTURAL CUSTOMS OF THE VALLEY.

The exterior clay-block walls made in D'Harris, Texas, provi
a highly efficient thermal mass, but they also lend color and texture
the surface. The blocks slow heat gain during high-gain periods a
release heat at night. Behind the wall is a deep airspace and radia
barrier to repel additional heat gain before the heat reaches the R-
insulated wall cavity.

The deeply corrugated, barrel-vaulted roof spans a long distan
with less material and eliminates structural redundancies. As compared
traditional truss and deck steel, this system reduces the amount of st
required by 48 percent. However, it serves a critical architectural purpo
as well. "The vaults of arch-panel shell roof are a reaction to a promine
form in the agricultural vernacular of the area," explains principal Rob
Harris, AIA. "These practical and efficient shell structures are commo
used for economical barn and storage structures."

"Engineered wood framing was used on the Hawk Tower a
viewing blinds for several reasons," explains Harris. "First, it has a m
natural feel in a remote habitat area; secondly, it eliminates the potent
for unchecked rust. It's an efficient use of wood products to choose en

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neered material rather than solid stock in larger sizes." Engineered wood has become popular as a substitute for the decreasing supply of old-growth trees. The wood comes from plentiful species, such as aspen and poplar, which typically is engineered into laminated strand lumber (LSL) and treated with a noncontaminant preservative called ACQ, a combination of copper and quaternary ammonium compound dissolved in an alkaline carrier system.

There aren't many projects that call on architects to heal the land while they're fulfilling program requirements, so in some ways, the World Birding Center is an extreme example. On the other hand, it's a textbook case of the invisible process that creates architectural form with meaning that is transparent and comprehensible. Projects such as Lake/Flato's Nursing School/Student Center building at the University of Texas Health Science Center in Houston are more the norm. The university's administration mandated that the school be a model of sustainable design, believing that a building that houses health and wellness programs ought to be healthy itself.

As with the Birding Center, the final result is more than the accumulation of high-performance materials and low-energy systems. But unlike the center, the $57 million nursing school had a complex program, one driven as much by the status a well-designed, state-of-the-art facility brings to an educational institution as by its mandate to be a model of sustainability. Lake/Flato and the Houston office of BNIM Architects collaborated on the school and achieved that coveted LEED Gold rating with all the familiar features. The design incorporates low-embodied energy (made of materials that require less total energy extract, manufacture, transport, construct, maintain, and discard), loc materials, daylighting, 60 percent reduced building water consumptio and natural gray/black water treatment systems. Its sophisticated envelo is tuned to respond to the climatic conditions of Houston, includi operable windows and spectrally selective glazing.

Principal Greg Papay, AIA, explains the process by describi the final product. "In the end, highly sustainable building does much emulate nature and natural systems. While it's easy to tell the visual di ference between a branch and a leaf, just as it is between, say, a facade ar the structural system, the two by necessity are highly integrated, each su porting a larger whole, each other, and the subsystems within the components," he explains. "In essence, there is a continuum and an inte dependence. So the best way for the process to produce that product is f the process to share the same approach."

In his book, Fernandez warns against the temptation to "dist an essential meaning from the materials themselves." The warni applies to the assignation of value to architectural form simply becau it's infused with quantifiable sustainable features. Lake/Flato's proce prevents its work from falling into this trap. The firm appears to adhe to Fernandez's dictum that "it is in a material's use that value is stru and intention fulfilled—that is, transformation toward meaning fro lowly material to humane building is achieved through the action deep values." ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- Read the article "New Technologies Create New Challenges" using the learning objectives provided.
- Complete the questions below, then fill in your answers (page 198).
- Fill out and submit the AIA/CES education reporting form (page 198) or download the form at www.archrecord.com to receive one AIA learning unit.

QUESTIONS

1. Design and construction, research and commercial application, are bound together by which?
a. research
b. the architect
c. building process
d. technology

2. Applied research is the search for which?
a. theories
b. test results
c. isolated inquiries
d. commercial applications

3. Expanding knowledge to include advances in material science and engineering is known as which?
a. biomedical engineering
b. technology transfer
c. innovation
d. exploration

4. Gore-Tex products were originally meant to provide solutions for all except which use?
a. protective outerwear
b. cable assemblies for electronics
c. medical implants
d. high-performance fabrics

5. Textiles require details that restrain them along their edges for which reason?
a. to resist raveling
b. to resist compression
c. they can extend for hundreds of yards
d. they have strength in tension

6. A building facade's framing members can be placed at fewer intervals for which reason?
a. textiles can be continuous up to 300 yards
b. textiles have high-tensile strength
c. textiles are ineffective in compression
d. textiles can close up a building faster than glass-and-metal frame assembly

7. The unusual program of the World Birding Center demanded a design process driven by all except which?
a. restoration
b. demonstration
c. nontraditional materials
d. reclamation

8. Southeast Texas building customs influenced all aspects of the architectural design except which?
a. buildings face south to block the summer sun
b. deep porches and covered circulation
c. buildings clustered to create comfort zones
d. use of engineered wood framing

9. The corrugated-metal, barrel-vaulted roofs on the Birding Center buildings allow for which?
a. slow heat gain
b. maximum water collection
c. grain storage
d. no need for insulation

10. Engineered wood framing was used on the Hawk Tower for the following reasons except which?
a. it has a more natural feel than steel studs
b. it eliminates the potential for rust
c. it is a better use of forest woods than solid stock
d. it does not use preservatives

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Tech Briefs

A Frank Lloyd Wright icon will rely on an energy-efficient HVAC system for better interior comfort • Can architects reverse global warming? One designer thinks so—and says why

nity Temple will use geothermal energy fter its first major restoration

ank Lloyd Wright's 1908 Unity mple in Oak Park, Illinois, is nsidered an early Modernist asterpiece for its compact monuentality and the striking planar ometry of its cast-in-place conete. Although its interior ranks nong the great public spaces of e 20th century, it proved uncomtable almost from the start. An vanced but poorly executed heat; scheme meant noisy radiators colder months, and the lack of -conditioning and proper ventilan made the building a sauna in e summer.

Last year, the church's itarian Universalist congregation ned forces with the Unity Temple storation Foundation to kick off e building's first major restoration, ich is slated for completion in 09—the centennial of the build;'s dedication. A significant mponent of the $12 million to 5 million project addresses e building's HVAC problems by stalling a new ground-source mp system for heating and cool;. The project will also involve pairs to the temple's reinforcedncrete structure, as well as provements to interior woodwork, hting, and art-glass windows; a w electrical system; and changes ADA compliance, including the stallation of an elevator.

The project team, consisting of chitect Gunny Harboe of Chicago d engineers Architectural nsulting Engineers (ACE) of Oak rk, must balance the needs of the ngregation with strict preservation quirements for the landmarked ilding, which comprises a temple, eeting hall, and entrance hall. he original users are still occupyg Unity," says Harboe, principal of nny Harboe Architects of Chicago. o it must still function as a place of worship, despite the fact that it's also a major tourist attraction and one of the most significant Wright buildings in the world."

New HVAC efficiencies

In improving the building's thermal comfort, the congregation wanted to use a system that would reduce operating costs and have relatively few adverse effects on the environment. Ultimately, the design team developed a system of geothermal wells, drilled to a probable depth of 300 feet. The design calls for a closed-loop fluid circulation system that will carry an antifreeze formula of glycol, ethanol, or another environmentally benign substance. It also has provisions for an ice-storage system for producing ice overnight to reduce the required chiller capacity, according to Mark Nussbaum, principal of ACE.

Nussbaum and his team are still finessing the number of wells and their exact depth. But he says adding the water loop and ice-storage capability does not add significantly to the cost of the project, particularly given the reduced chiller capacity it affords.

The new HVAC system will also mostly fit within the existing utility trenches and ducts at Unity, lessening the impact on the original structure.

In a bit of function following historic form, the geothermal scheme will be augmented by radiant heat by converting Unity's existing radiator units. When the building opened in 1909, its radiators were connected to a forced-hot-air system—not common in its time—that was fed by a coal-fired steam boiler. But the system performed so poorly that Trinity's congregation converted the radiators to steam heat in 1910, according to Nussbaum. The boiler was later converted to oil in the early 20th century, and to natural gas by the 1970s. During the current renovation, a high-efficiency natural-gas boiler will replace the latter to provide backup heat and heat for cooking.

The new scheme's demand-controlled ventilation system, which is triggered by carbon dioxide levels (a proxy measurement for the number of occupants in the building), is tailored to the needs of both users and the historic building fabric. "The system brings in only enough fresh air to meet actual needs, and it allows for a porous building," Nussbaum says.

This last point is important because Unity's single-glazed leaded art glass is porous and difficult to control thermally. But measures like storm glazing would compromise the building's aesthet-

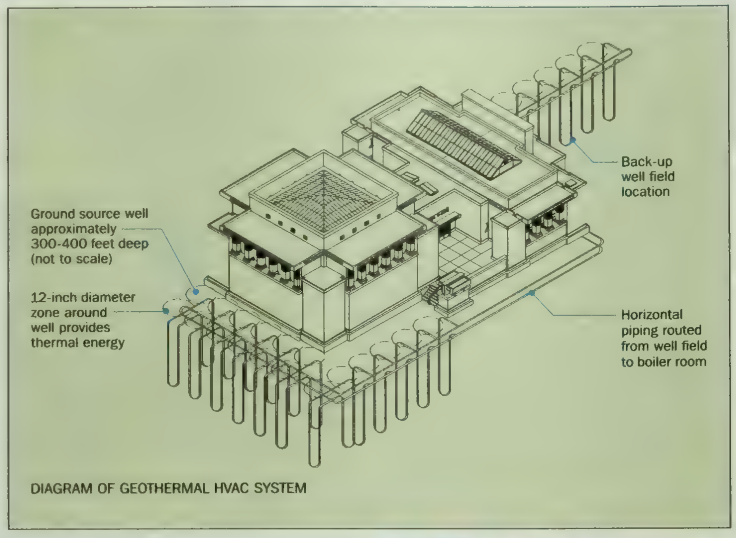
Ground source well approximately 300-400 feet deep (not to scale)
12-inch diameter zone around well provides thermal energy
Back-up well field location
Horizontal piping routed from well field to boiler room

DIAGRAM OF GEOTHERMAL HVAC SYSTEM

A new geothermal system for Wright's Unity Temple (schematic above) will improve indoor comfort and help slash heating and cooling costs by up to 50 percent. Wright's cast-in-place concrete structure broke the mold for religious buildings when it was finished in 1908.

ics and could also create moisture problems, according to the designers. Nussbaum says the overall HVAC design doesn't require an airtight building to work efficiently. "We don't have any delicate museum artifacts here," he says, "so we can improve indoor comfort without damaging the building's shell, which is pretty hardy."

ACE used software to model the structure's energy performance, even though its as-built conditions have never been fully documented. "It's difficult to do energy modeling for a building when we don't thoroughly know its construction," he says. "There are some voids in the masonry walls, for instance, but it's not clear exactly where they are."

The models, then, approximated the building's performance with its present equipment and consumption levels. Overall, the calculations show improved efficiency during the heating season, which should compensate for the new cooling load. "We expect to see a 40 to 50 percent reduction of utility bills over what a conventional HVAC system costs," Nussbaum says. Another benefit of the geothermal system is that it typically provides an 80 percent reduction of source emissions compared to systems powered by fossil fuels, he says.

Making the old new again

Aside from the HVAC improvements, the rest of the renovation ranges in complexity. Wright's cast-in-place concrete structure was innovative for its time, and structurally it is still in good shape overall, according to Harboe, despite some cracks and spalling. "We're not anticipating replacing rebar," he says. "The major work was the overhangs," he says. Unity's signature heavy eaves were rebuilt several years ago.

The temple skylight requires significant restoration. "It's our intent to go back to the original design. There is some of the original fabric, but there's a question of how much we can reuse," says Harboe.

Many layers of paint coat the interior oak woodwork, most of which is original. "Ultimately, we'd like to remove the paint and go back to Wright's original finish, which was a clear resin," Harboe says. Wright also applied color washes directly to the interior's plaster walls; the restoration team is making mock-ups to replicate the original washes.

A photo dated 1925 shows a women's group that may have been part of Unity's early congregation.

The restoration team will also reevaluate Unity's previous, periodic maintenance program to see if changes are needed.

One concern for the interior is that the planned changes, such as the new mechanical systems, air handlers, and the like, might affect the original temple's excellent acoustics. The work is bein reviewed by an oversight team of architects, engineers, and preservationist specialists, who pore over details to mitigate any physical and aesthetic intrusions, and ensure they are reversible, if necessary.

"We want to make sure we do no harm," Harboe says. "I think it's doable without any majo gymnastics." *Ted Smalley Bowen*

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A Santa Fe architect calls for carbon-neutral buildings in the next quarter century

In January, Edward Mazria, AIA, launched the Web site Architecture 2030 (www.architecture2030.org), where he explains the link between buildings and global warming and calls for all buildings to be carbon-neutral by the year 2030. Mazria, who's done extensive research on building energy use, talked with RECORD *about the urgency of his proposal and how the design community will achieve it. (For the full text of the interview, log on to greensource.construction.com.)*

ARCHITECTURAL RECORD: *Your research has determined that buildings are responsible for half of all greenhouse gas emissions worldwide. How did you come up with that figure?*

MAZRIA: I developed a way to look at buildings as a sector of the economy, the way the industrial and transportation sectors are tracked. I defined the building sector to consist of what we, as architects, control. When we design a building—its orientation, massing, fenestration—we set in motion its energy consumption pattern. And we also control what materials buildings are made from. In my calculations, I included the energy use of buildings as well as the embodied energy of construction materials.

AR: *So, how did you determine that designers have less than 25 years to figure out how to make carbon-neutral buildings?*

MAZRIA: This is based on climate research done by the European Union. Their scientists have determined that the maximum amount of global warming the planet can tolerate is 2 degrees Celsius. If we continue on our current path, we'll achieve that rise by about 2050, and we'd reach a rise of three degrees Celsius by 2070. With a temperature rise that high, the consequences are catastrophic—the polar ice caps would melt, warmer ocean temperatures would result in severe weather patterns, and we could lose 25 percent of the species on the planet. To avert the two degrees centigrade rise by 2050, scientists say we need to reduce total worldwide carbon emissions by that date by 40 to 60 percent below 1990 levels, which was the benchmark set by the United Nations. For buildings, this means we must rely less and less on fossil fuels for energy. When you back-calculate how much energy buildings consume, combined with the temperatures predicted by these scientific models, you come up with a very rapid time frame: reducing fossil fuel consumption of buildings by 50 percent by the year 2010, and 10 percent more every five years until we achieve carbon-neutral buildings by 2030.

AR: *The AIA has endorsed your point of view with a major polic statement released in December. What steps need to be taken to achieve these goals?*

MAZRIA: As architects, we can design more energy-efficient buildings and also specify materials tha have low embodied energy and are made with clean energy sources. Educators and regulators must adopt better energy standards for buildings. We're working with architecture schools and all levels of government to make sure this hap pens. Most important, we must also change the building codes in the U.S. It's a huge effort, yes, but critical to the future of the planet.

Interviewed by Deborah Snoonia

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Lighting

Louis Vuitton's expressive lighting relies upon a standardized set of custom-manufactured fixtures

BRIEFS

Ultimate Lighting Design (teNeues, 2006) is a jumbo-size (512 page) monograph surveying the architectural lighting projects of the firm L'Observatoire International. Led by principal designer Hervé Descottes, the team has an impressive portfolio. It has collaborated with architects including Frank Gehry (Walt Disney Concert Hall and Bard College's Fisher Center for the Performing Arts); Diller, Scofidio + Renfro (Lincoln Center and New York's High Line); and OMA/Rem Koolhaas (three museums in Korea), among many others. **Yet this is largely a look book** of glamorizing photos. The text explaining the lighting design of 64 international projects is often only two or three sentences long (albeit translated into five languages). At times, the text is more evocative than informative: To describe a collaboration with Steven Holl, for example, the book reprints an early lighting concept the firm wrote in free verse(!). The lack of description is abetted by some cross-section and axonometric illustrations of fixtures, plus a section on custom luminaire designs. Perhaps a photographic compendium of many illuminated building types suits you. The ultimate treatment? Not really. www.teneues-usa.com.

Transformed by Light: The New York Night is an exhibition currently at the Museum of the City of New York that reveals how electrical illumination shaped the legend and experience of the city. On view through May 7, the show immerses visitors in a series of environments that portray the essential role of architectural lighting in the construction of New York life—on the street, at home, in the office, and on the town. Artifacts range from **Rockefeller Center Christmas tree bulbs** to a giant neon letter *i* that once towered over Columbus Circle. The exhibition was curated and designed by Chicken & Egg Public Projects, and it features **lighting installations by 10 firms**: Available Light; Brandston Partnership; Horton Lees Brogden Lighting; Bouyea & Associates; Jim Conti Lighting Design; Focus Lighting: Gallegos Associates; Naomi Miller Lighting Design; Tillett Lighting Design; and Tirschwell & Co. The Illuminating Engineering Society of North America sponsored the show, with additional support from major lighting manufacturers. www.mcny.org.

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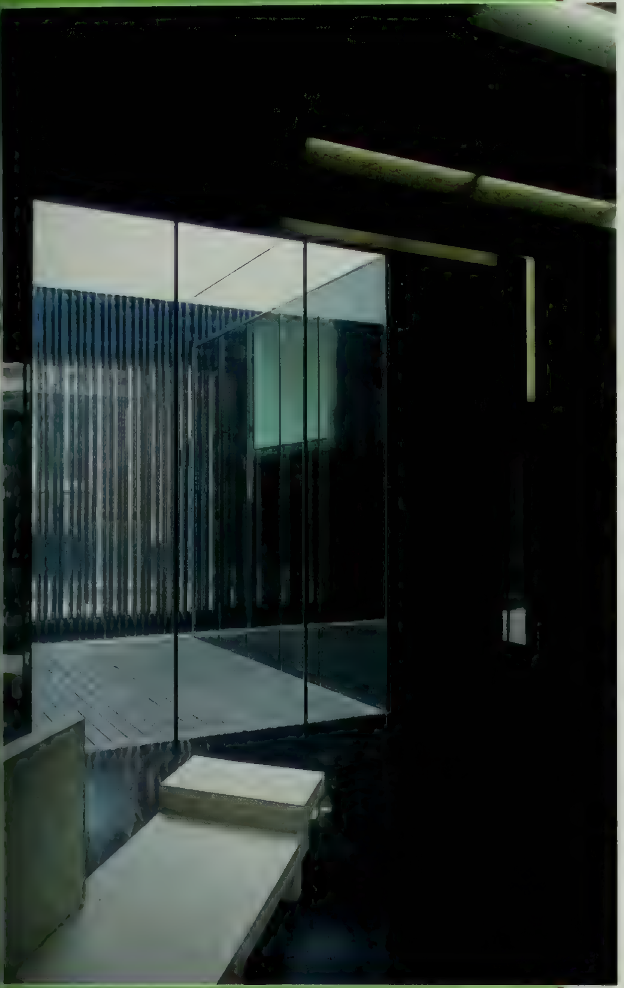
To love beauty is to see the light," wrote Victor Hugo. In the writer's beloved Paris, a new Louis Vuitton store is swathed in interior lighting in part inspired by the filtered light and shadows of the streetscapes Hugo prized. Achieving the store's engaging effects was not only a matter of aesthetics, however. Lighting designer George Sexton Associates has refined and standardized a kit-of-parts system of custom fixtures that creates signature lighting in all the brand's international flagships. "Like museum lighting, which requires a high degree of control, retail lighting now demands the same degree of care," says principal designer George Sexton. "Lighting is very integrated into the architecture, and shouldn't overwhelm what's on view." Read on, to learn how this retail space shines in the City of Light. *William Weathersby, Jr.*



m's black-resin floor reflects daylight from the
yard (above). Ceiling slots are lined with fluores-
scents juxtaposed against the colorful interior
a courtyard with a view of the main building
hey also light the Minimalist kitchen (opposite).

PHOTOGRAPHY: © LYNDON DOUGLAS

For London's **Lost House,** Adjaye Associates carves a residence that captures changing qualities of light

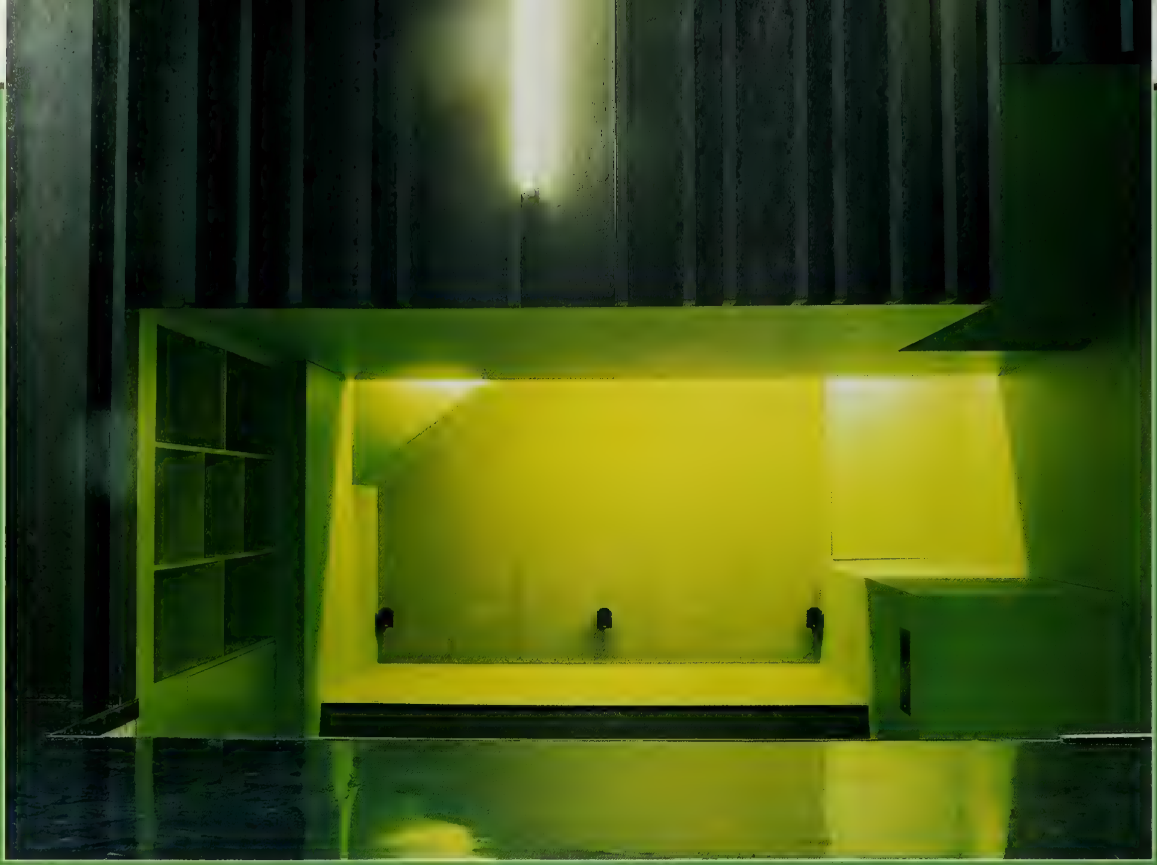
By William Weathersby, Jr.

Over the past six years as principal of his own firm, David Adjaye has gained a reputation as one of Great Britain's most promising young architects. His series of conceptually driven houses and apartments strip away artifice to revel in bold Minimalism [RECORD, December 2002, page 126]. Although he has begun to tackle international projects on a larger scale, such as the commission for the Denver Museum of Contemporary Art, Adjaye continues to approach residential projects in London as intimate laboratories for experimenting with color, light, and form.

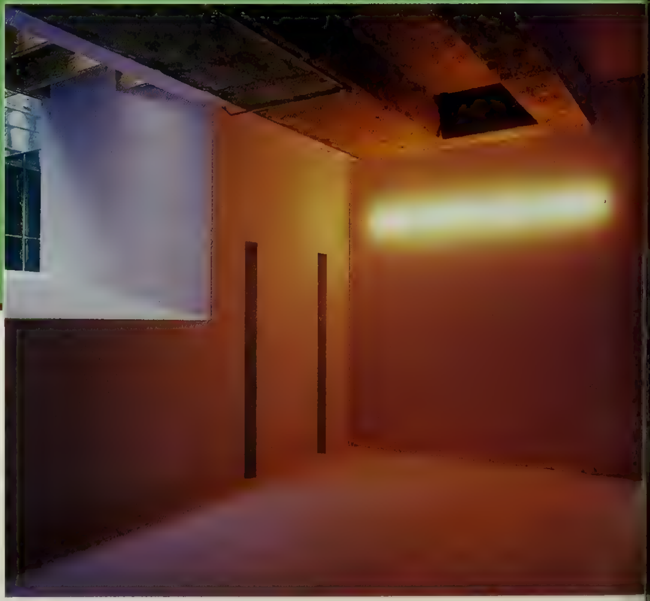
With the architectural and lighting design of Lost House, a two-bedroom apartment in the King's Cross neighborhood, Adjaye has created a mysterious urban retreat that evokes a hidden lair. The residence is a study in the balance between darkness and light, absorption and reflection. A series of light wells, internal courtyards, and skylights harness diffused daylight, while dimmable exposed fluorescents set against intensely colored walls provide moody illumination.

Commissioned by a fashion designer (who previously studied architecture) and her apparel-executive husband, Lost House overhauls and expands a space that was already converted from industrial to residential use in the early 1990s. The apartment's footprint once was the loading dock and courtyard of a warehouse built in the Victorian era and modernized in the 1930s, and most recently was annexed as part of the apartment building. Hemmed in and mostly hidden by the surrounding taller facades of the rest of the complex (hence its "lost" appellation), the existing one-level apartment featured nondescript, white-walled rooms that were mostly windowless except for one elevation's views onto a windswept garden that remained in shadow much of the day.

To expand interior living space while retaining a connection to the outdoors, Adjaye enclosed most of the courtyard but carved out three glass-enclosed interior gardens open to the sky to serve as focal points. The gardens decrease in size as one moves diagonally through the plan. The front entry garden features a wood deck and looks onto the street through a screen of black timber strips fitted into the former truck bay. A central garden features a small pond. The top band of this space's glass enclosure is edged in mirrors to further reflect daylight and the movement of water, visible from within the surrounding rooms. The smallest light court, a pivot point between the kitchen, a bathroom, and one end of the main living space, encloses a small mound of earth and an evergreen tree: a stylized garden. "The three courtyards function as their own sculptures, encompassing changing light and weather conditions," Adjaye says. "I wanted to look at how light comes into an interior as a phenomenon, not through the apertures of standard windows."



The media room, a sunken space just off the living room, features shelves, paneling, and platforms that create a sculptural landscape with luminous chartreuse surfaces (above). Fluorescent lighting is both exposed and concealed. In the master bedroom, each wall is painted a slightly different shade of lilac to play with light (right). Rather than a window, the mirrored aperture reflects daylight from a light well in the ceiling, "a periscope effect," Adjaye says.



The open-plan main living space features a shiny black-resin floor and black-stained timber walls. The black surfaces visually expand the space and create a dark void into which daylight filters through the glazing. "The living space's darkness intensifies the perception of the daylight coming in from the courtyards," notes Adjaye. Exposed, dimmable fluorescents line the edges of the black walls for ambient light, and frame the glazing. Bordering one side of the space, a step-down, sunken media area is painted chartreuse for a dramatic contrast. Here, both exposed and concealed fluorescents emphasize the pocket space's vibrant color.

In the master bedroom, each wall and the carpeted floor is a slightly different shade of lilac, while the second bedroom achieves a similar effect in tones of mint green. The gradation of color heightens "the perceptual and psychological effects of how light interacts with the architecture," Adjaye says. Rather than windows, light wells in the ceiling of each bedroom allow daylight indoors, which is reflected in horizontal mirrors set into apertures with canted edges. Also fitted with exposed fluorescents, the rooms become engaging, three-dimensional color fields that are foils for changing conditions of light. ■

Project: *Lost House, London*
Architect, lighting designer: *Adjaye Associates—David Adjaye, principal; Josh Carver, Craig Tan, Ixone Altube, Mattus Vallo, project team*
Structural engineer: *Price & Myers*
Contractor: *RJ Parry*

Sources
Fluorescents: *Philips Lighting*
Glazing: *Profile Glass*
Moss roof: *Erisco Bauder*

For more information on this proje
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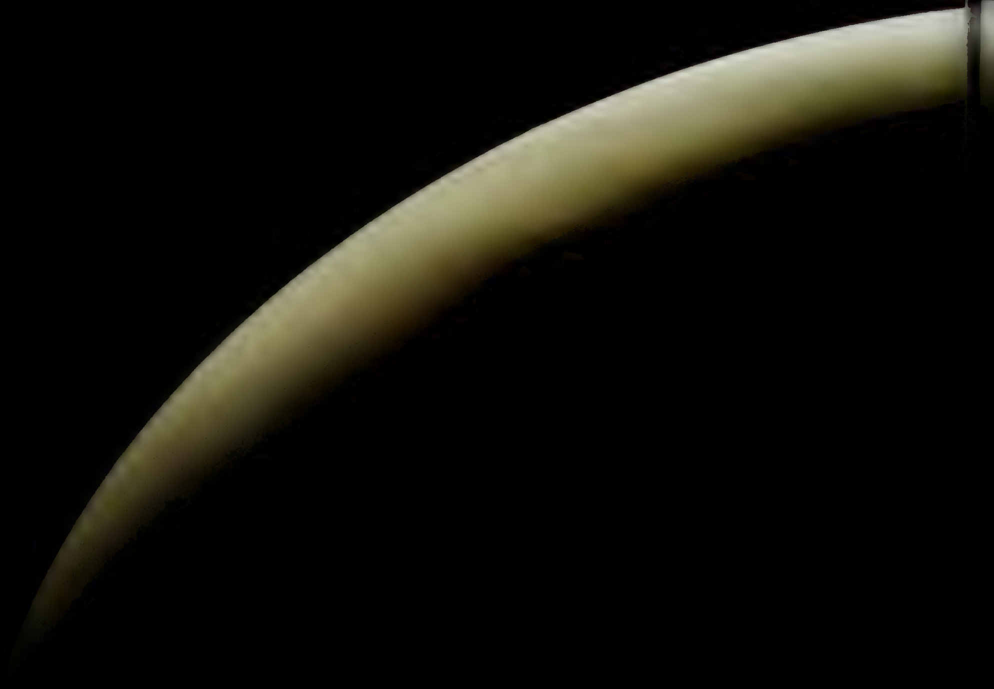

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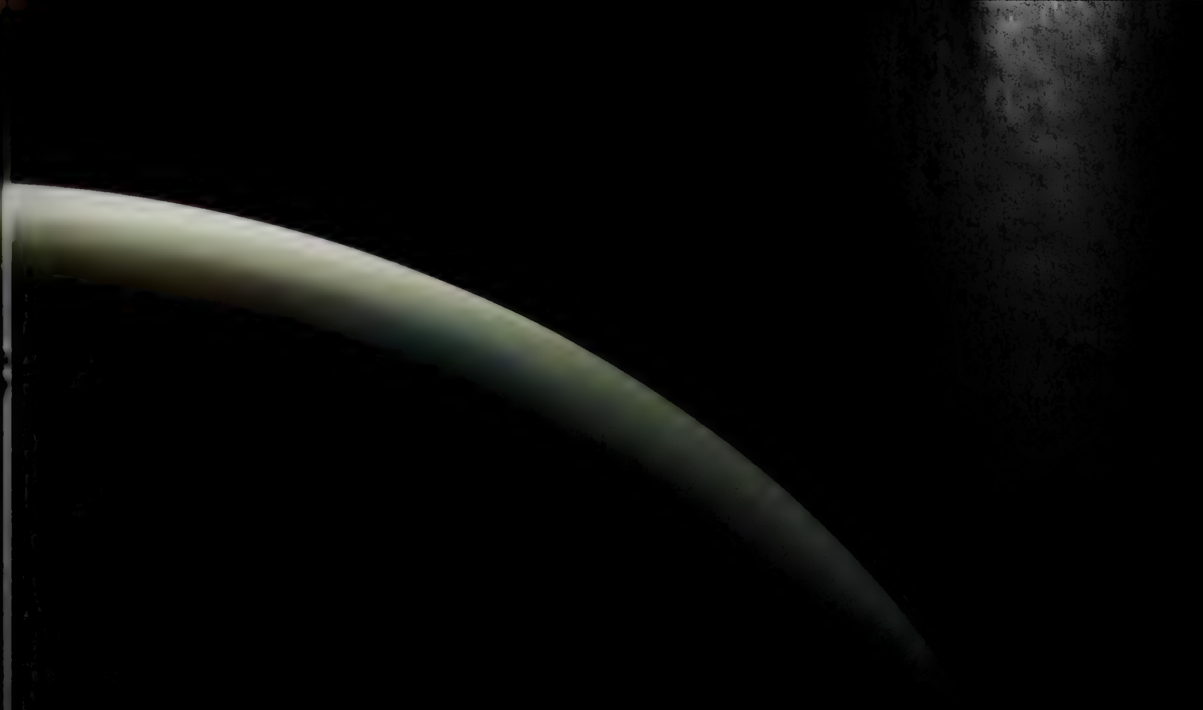

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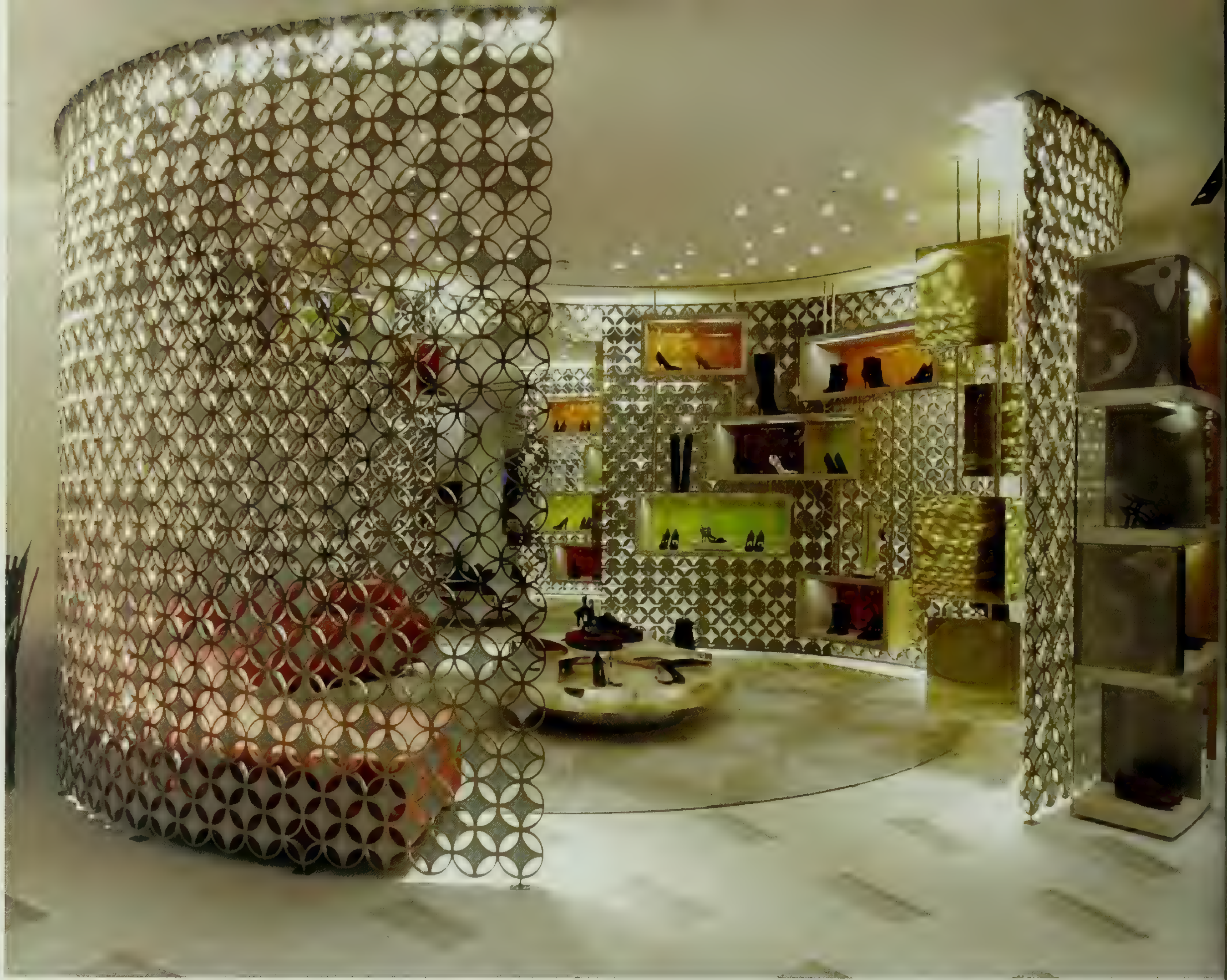


George Sexton Associates wraps **Louis Vuitton** with glittering, layered light inspired by Parisian sunsets

By Robert Such

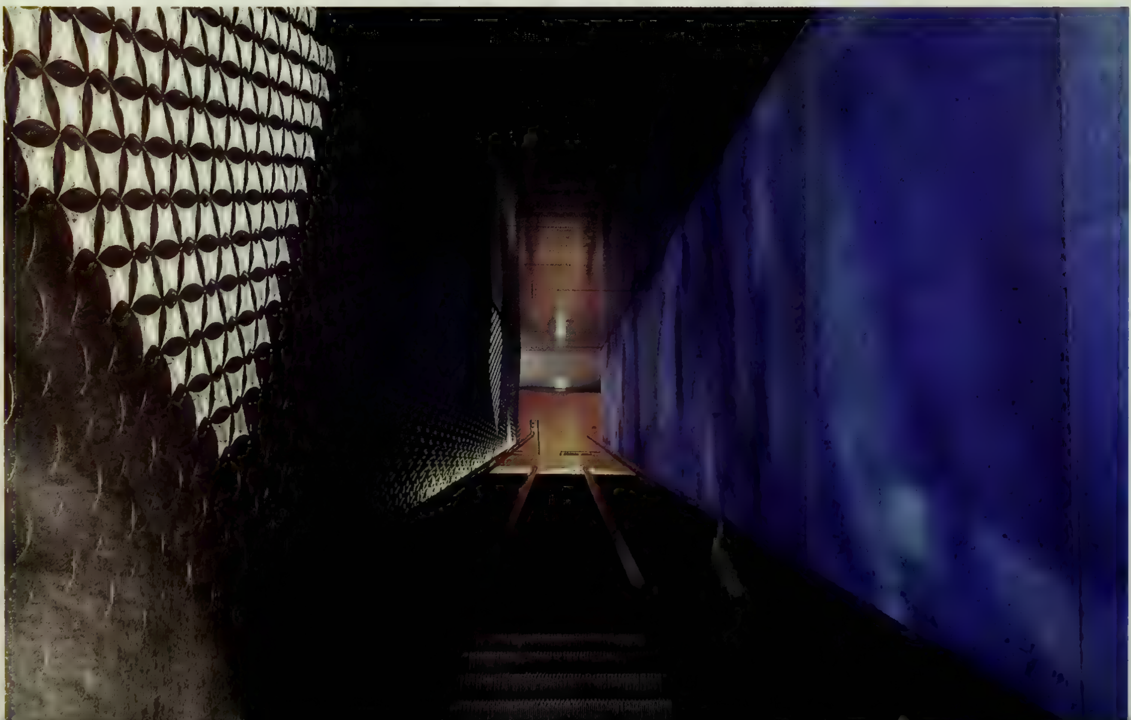
In recent years, the French luxury retailer Louis Vuitton has blazed a trail as a trendsetter in retail architecture, constructing blockbuster stores in Tokyo [RECORD, February 2004, page 143], New York, and Hong Kong. Last fall, it unveiled another showstopping venue on the Champs-Elysées in Paris. Sitting across the street from the site of the original LV shop built in 1914, the new 20,000-square-foot flagship turns a shopping trip into a promenade along a succession of dramatic interior terraces. Inspired in part by the dappled light of Parisian sunsets, multilayered illumination by George Sexton Associates (GSA) creates a glittering backdrop for the luxury goods on display.

For this project, a renovation of a 1931 building originally housing the Maison de France, the government tourist office, GSA again co laborated with a team of architects who are also LV veterans. The Lou Vuitton Architecture Department, headed by David McNulty, oversaw t project. Carbondale, a firm led by architect Eric Carlson (who previous ran LV's in-house department), designed the facade alterations, interi space plan, mesh panels, atrium, and escalator image wall. Peter Marir Associates orchestrated furniture, displays, floors, and wall finishes.

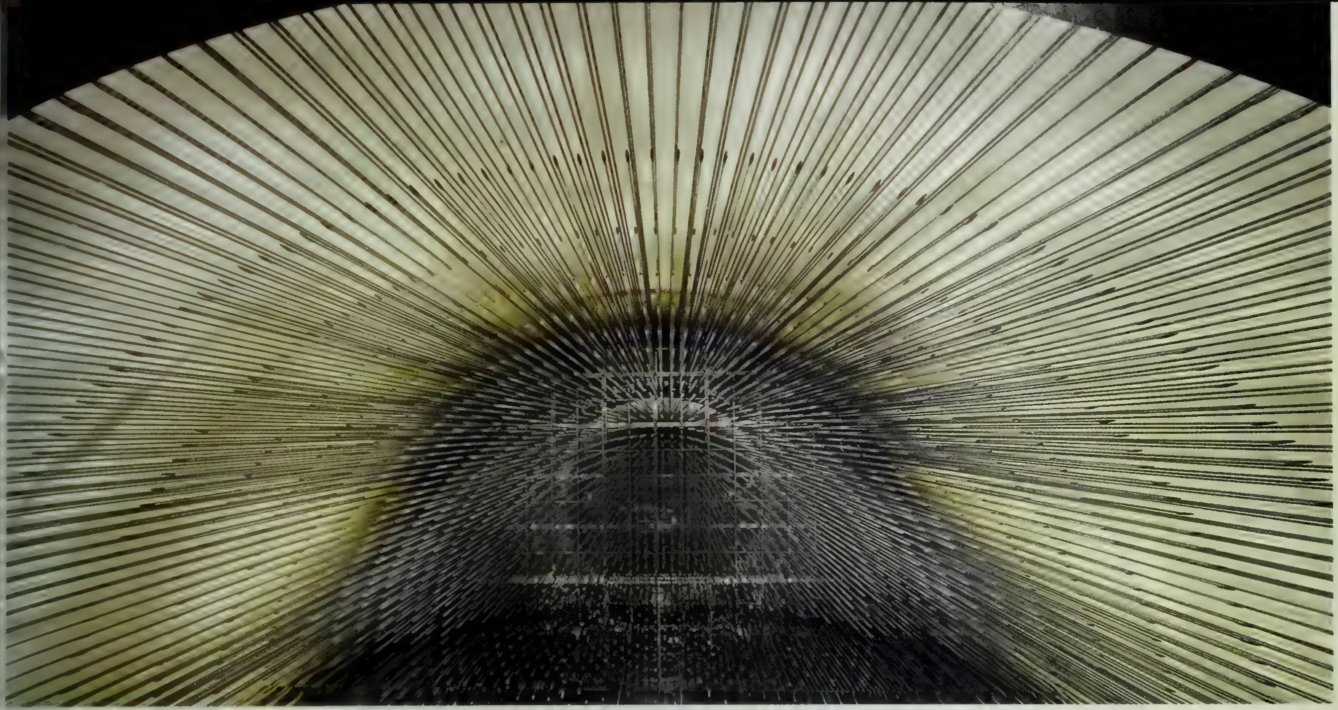
Robert Such is a writer and photographer based in Stoke-on-Trent, England. He frequently writes about international architecture and lighting design.

Project: *Louis Vuitton, Paris*
Lighting designer: *George Sexton Associates—George Sexton, principal designer*
Architects: *Carbondale (facade and interiors)—Eric Carlson, Cristiano Benzoni, principals; Peter Marino Associates (furniture, finishes)*
Associate architect: *Barthelemy-Grino Associates*
Design management: *Louis Vuitto Architecture Department*

Mesh-screen partitions (opposite), which incorporate the company's signature diamond-and-leaf motif, are lit with PAR20 metal halides. GSA developed a kit-of-parts system of custom fixtures used in every LV store, including concealed fluorescent tubes for shelving and MR16 downlights (left and above).



At the center of the store, an enclosed 70-foot-long escalato turns conveyance int art appreciation (left) Twelve panels comprising 720,000 fiber-optic points make up the abstract installation *Alpha*, th work of American video artist Tim White Sobieski. Elsewhere, projected videos (above right) and illuminated mesh screen (above left) enhance circulation routes.

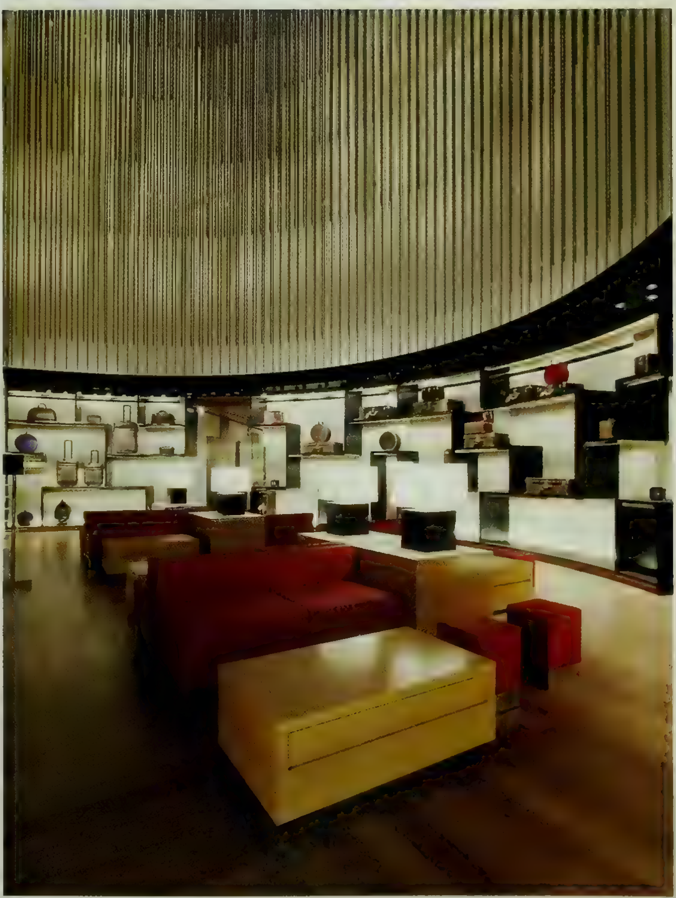


Carlson conceived of the promenade layout concept, dispensing h standard enclosed retail floors and instead carving out volumes hin the existing structure to create multiple platform levels that pro- te fluid movement. Throughout, brass-mesh panels partially screen ıdows and serve as buffers between retail zones. Fitted into a slot along upper edge of each mesh panel, metal halide PAR20 lamps graze the ɛens along the windows and blend with daylight for a dappled effect. ere the partitions serve as area dividers, they take on the appearance of size sparkling bracelets linked together. Inlaid at different points with her, glass, porcelain, and wood, the illuminated mesh skin evokes a ıting effect Carlson observed on a walk through Paris. "When the sun ; on a street axis in the late afternoon," he says, "the light washes over ɔught-iron balustrades, creating a glistening secondary facade."

Along the promenade and down through a spiraling walkway, ogen MR16 spotlights set into ceiling slots provide ambient and accent ıting. Additional MR16s wash plaster walls and graphic panels. Inside play cases, T5 fluorescents crisply illuminate jewelry and accessories.

Louis Vuitton also commissioned artworks by light artist James rell and Danish artist Olafur Eliasson to enrich the shopping experi- ɛe. And located in the building's former courtyard, now a six-story ume in the center of the store, a dramatic array of 1,900 hanging steel ls refracts light as an impressive canopy. Washing the curved inner sur- e with warm light, AR111 tungsten halogen fixtures are hidden within ɛdge set along the lower rim of the semicircular steel curtain.

The lighting effects dazzle, but practicality was also a priority. ne challenge was to carefully budget energy usage," Sexton says. "The ium's complex HVAC requirements limited use of electrical energy for ıting." To light the dome, for example, the team bypassed metal halides l instead specified less-expensive, lower-wattage tungsten halogens, but greater quantities, to generate sparkle and even illumination. ■



Tungsten halogens graze the steel curtain within the atrium (above). The light is reflected in the edges of the rods as viewers look overhead, creating a visual effect Carlson calls "sparkling stars" (top).

---

urces

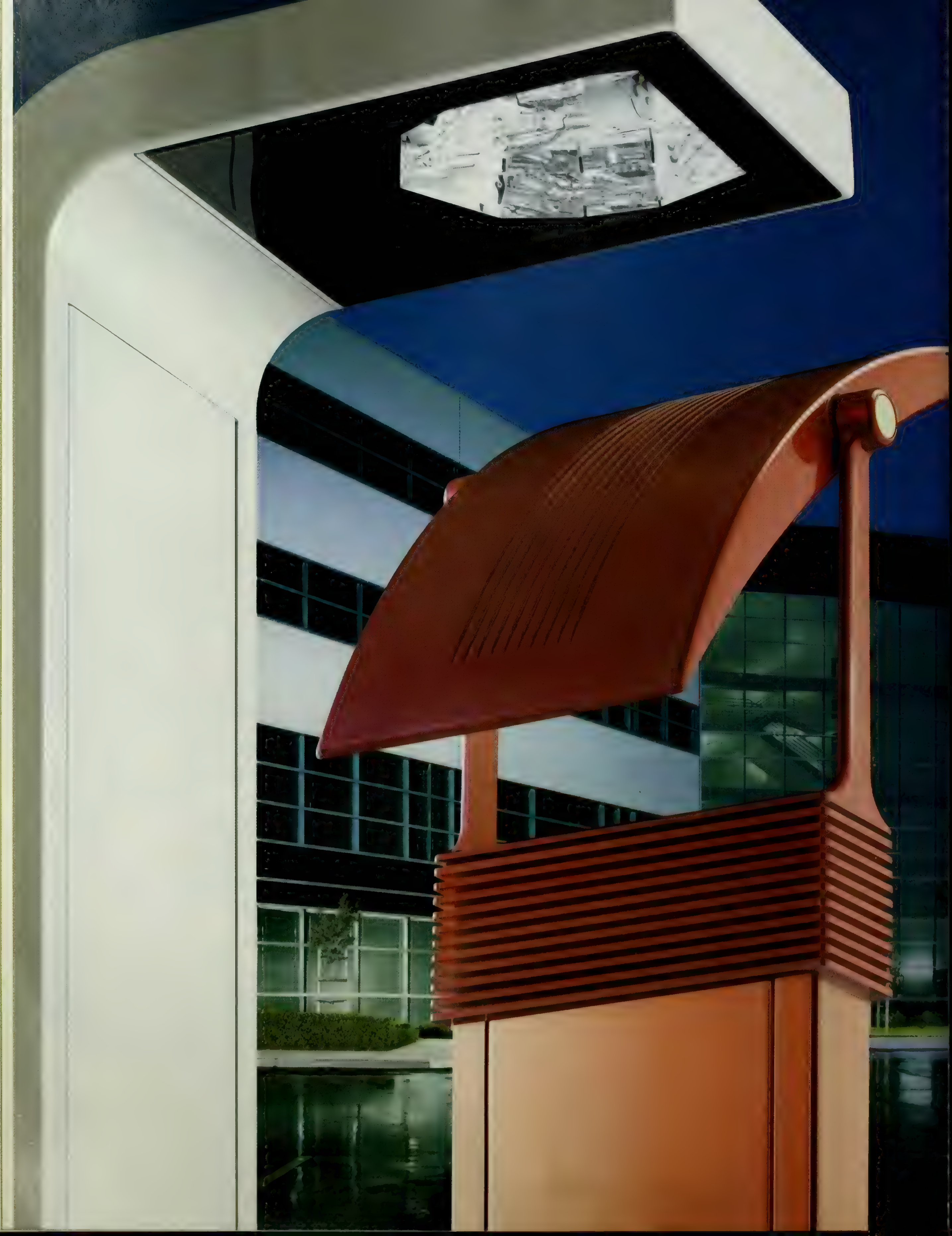
stom fixtures: *Equinoxe*

16 lamps: *General Electric*

111 lamps: *Osram*

hting controls: *Lutron*

For more information on this project, go to Lighting at ***www.archrecord.com***.



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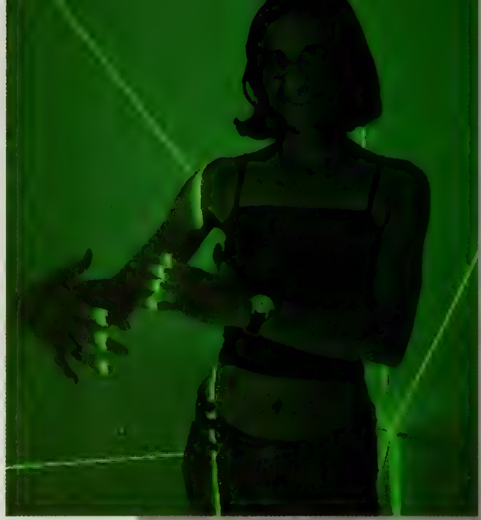
Architect and multimedia artist **Iole Alessandrini** explores the interactions between light and space



Season, Winter
Light **was a tempo**
installation in Tacor
(opposite, top) in wh
Alessandrini wrapp
two blocks of crum-
bling brick foundati
with the light from
metal halide fitted
red gels. The artist
ticipates in her rece
laser installation (le

By Robert Such

Multimedia artist Iole Alessandrini tills the imaginative landscape where light and architecture intersect. Trained as an architect and fine artist in her native Italy and as a lighting designer at the University of Washington, the Seattle resident employs daylight, electric illumination, sound, and video in ephemeral, site-specific installations, often within industrial buildings and urban ruins. Her goal is to enhance and bring attention to neglected built environments, perhaps sparking public debate.

"Architecture represents movement, a powerful symbol that redefines space and invents new functions," she says. "Light is energy, a minimalist medium that interacts and transforms something that already exists. My work explores the relationship between the two, and how together they may alter perception."

Alessandrini often combines lighting with smells and soundtracks of invented language or electronic noise to create works that the public can encounter by accident, such as the one near a Tacoma roadside where she lit crumbling wall fragments. She alternatively transforms empty and inactive sites into disorienting, eerie, or uplifting places.

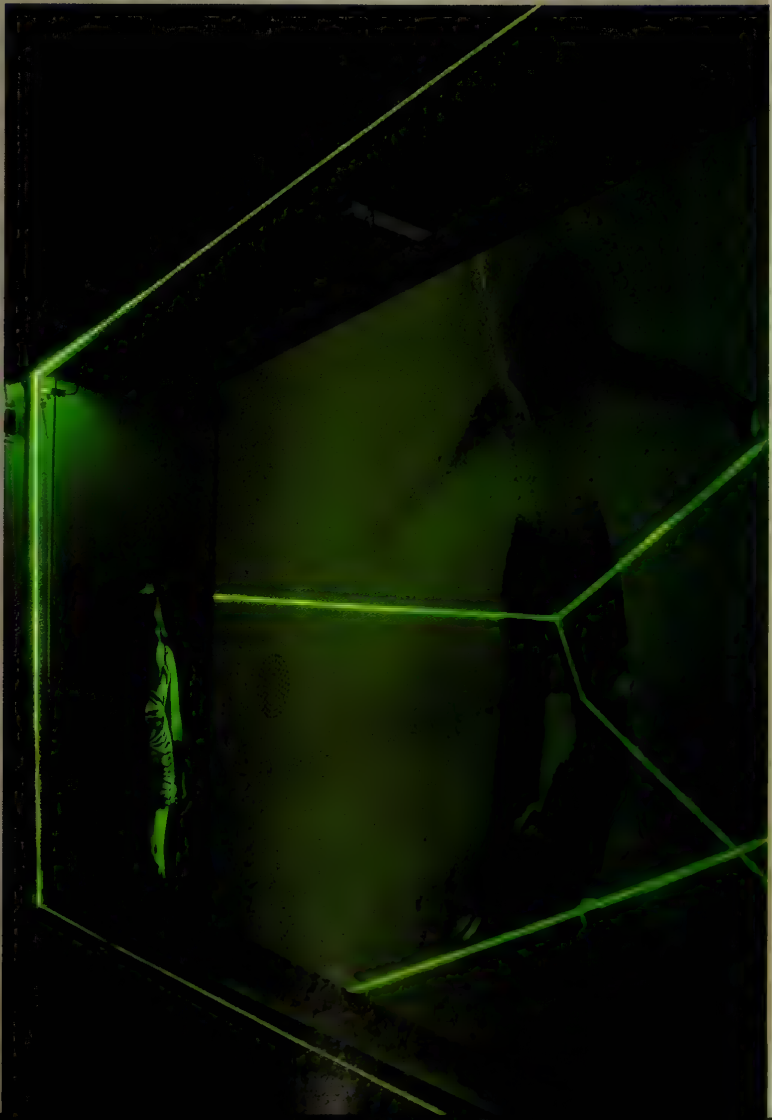
The artist, whose father and grandfather were cabinetmakers, was born in Avezzano, Italy, in 1962. Her family moved to Rome when she was a young child, and she later studied fine art and architecture there. Alessandrini was encouraged by a mentor to apply to graduate architecture school at the University of Washington, which also ran a study center in Rome. When her enrollment in Seattle was delayed by university red tape in the early 1990s, she decided to move to London for a year to improve her English and to work for the architectural firm ORMS.

Once at the University of Washington, Alessandrini was taken under the wing of lighting design professor Marietta Millet, "whose passion and knowledge about lighting and visual perception stirred my interest," the artist says. Researching color and optics as a graduate thesis, Alessandrini began to experiment with light, exploring the psychological and perceptual effects of various types of illumination interacting in different enclosures. The more she experimented with light, the more she veered away from wanting to practice architecture.

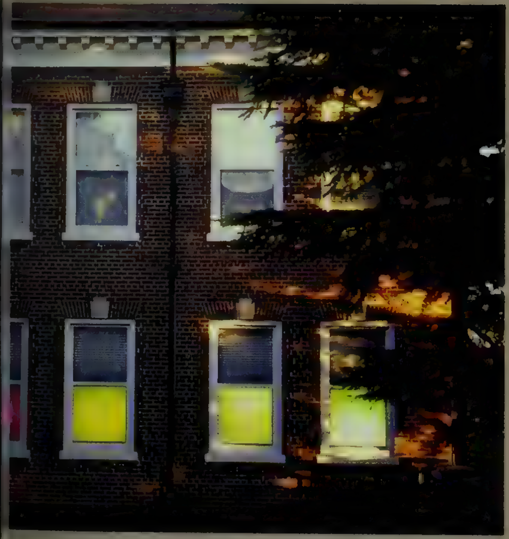
Last year, Alessandrini exhibited a laser installation at Seattle's Center on Contemporary Art. Titled *Threshold*, it was the next stage in her research into lasers. "I like to fill spaces with smoke and over time simultaneously observe light and space," she says. Using the camera's ability to take long exposures, Alessandrini photographed people moving slowly through a sheer wall of green light, producing some strange visual effects, holographlike images built up from traces of laser light striking

Capital Hill Library,
where the artist wrapped
an entry trellis in light,
was a collaboration with
Johnston Architects and
Cutler Anderson.

PHOTOGRAPHY: © IOLE ALESSANDRINI



***Untitled*, a 2004 laser installation at Seattle's Jack Straw Production New Media Gallery, paired sound and lasers to create discrete zones.**



***Building 9* was part of the Horse Head Sculpture Project. Here, the artist installed light, color, and scents in the windows of a building.**

***Erikson Sidewalk*, a glowing red walk-through installation in the 1997 exhibition *Encounters With Space*, was mounted at Seattle's John Erikson Building.**

***Queen Anne Park*, a light study for a proposed installation in an urban Seattle park, shows how illumination would emanate from canted walls sloping to the ground.**

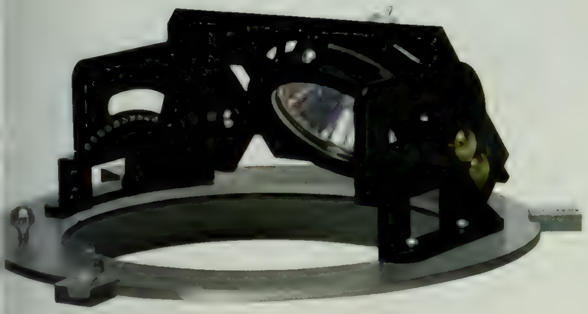
each person passing through the vertical partition.

Untitled, a blacked-out gallery space crossed by six lasers, became a sort of "satellite space," she says, seemingly disconnected from the outside world. She and other participants moved around "feeling immaterial," in an enclosed theatrical arena.

Another project, *Aqua Pura Vista*, was an audiovisual work focusing on memories, constructed inside a brick-and-metal water tower in Seattle's Volunteer Park. Attracted by the sounds of dripping water and gentle chanting, visitors climbed to the top to watch video images of floating bodies and colorful overlapping projections of arches on a cylindrical screen. Light from 26 halogen lamps and gels mimicked the patterns made by the sun falling through the tower's own arches.

Funded by grants from both the public and private sectors, and sometimes commissioned by architects, Alessandrini's artistic process begins with a site survey, exploring potential links between a structure and
its surroundings. When working in a gallery space, she reflects on h
her artwork will interact with a conventional arts venue. She builds sc
models to test her lighting solutions. Models enable the artist to execut
design, and sometimes "are more interesting and revealing than what I h
originally envisioned, sending me off exploring once more,"she says.

In terms of the practical applications for her resear
Alessandrini says she believes the work of artists eventually influen
mainstream thinking and can lead architects in new directions wh
thinking about light and space. She is currently collaborating with la
scape architect Bob Murase on a public outdoor project in Seatt
Uptown Queen Anne neighborhood. The planned park will have a lo
sloping central area bounded by trees. For canted, slitlike openings
the ground, Alessandrini is designing a color-changing LED installati
drawing life to another empty urban environment and filling it w
sound and light. ■



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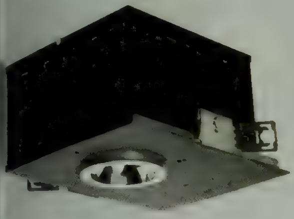

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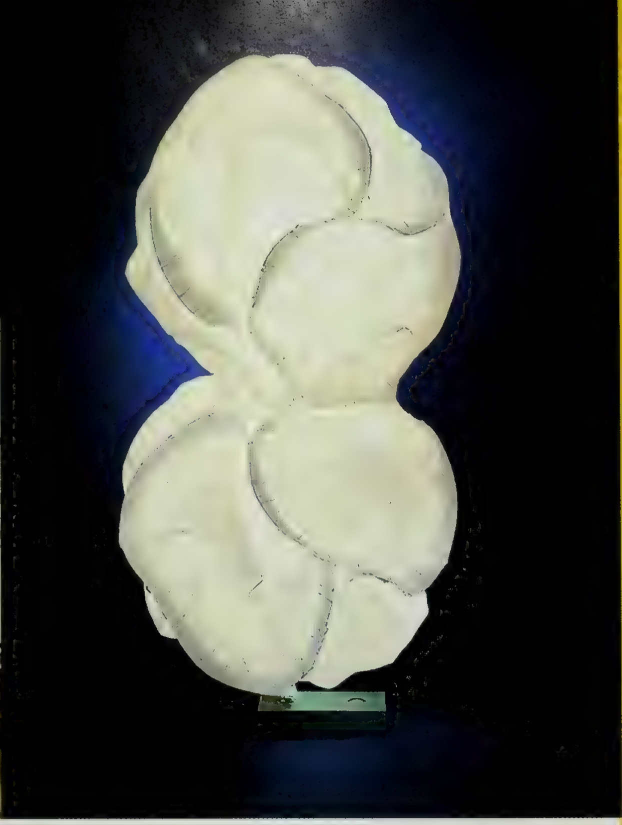
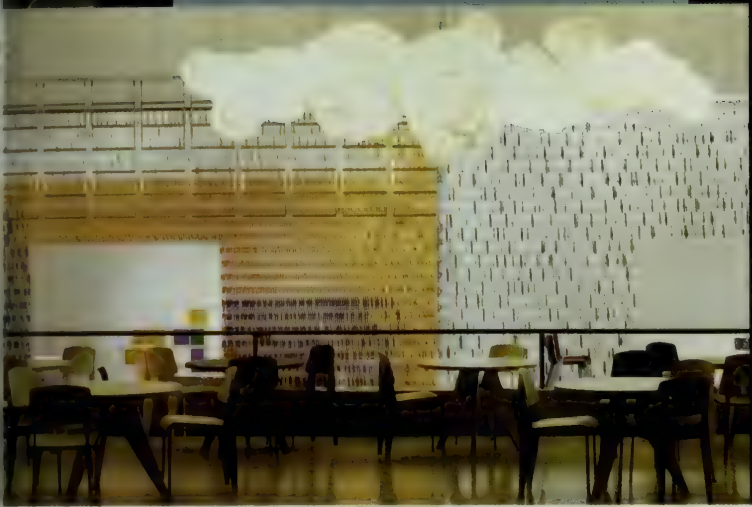
Frank Gehry says his new Cloud Lamps are an homage to the Akari lamps of Isamu Noguchi. The sculptural luminaires are constructed of sheets of translucent polyester clipped together to form irregular shapes around a 100-watt incandescent bulb. The units, in three volume sizes, can be grouped vertically (right) or horizontally (below).





ehry on lighting the clouds

terview By William Weathersby, Jr.

rank Gehry is the master of creating sculptural buildings renowned for their voluptuous curves and light-refracting skins. For his latest product designs, the architect looked toward the clouds. His new ies of Cloud Lamps, designed for Vitra, are dramatic lighting fixtures t seem to float. The fixtures evoke the luminous lamps of Isamu guchi, but with a crinkly, one-of-a-kind twist. Made from a fire-retar-nt, tear-resistant skin that looks like paper, each Cloud Lamp seems like ound object showcasing countless folds, crimps, bulges, and dents. ailable as a hanging, standing, floor, or table lamp, the Cloud houses a gle incandescent lamp affixed to a transparent polycarbonate ring. In w York recently for the launch of the new lighting line, Gehry sat down h RECORD *to talk about his designs.*

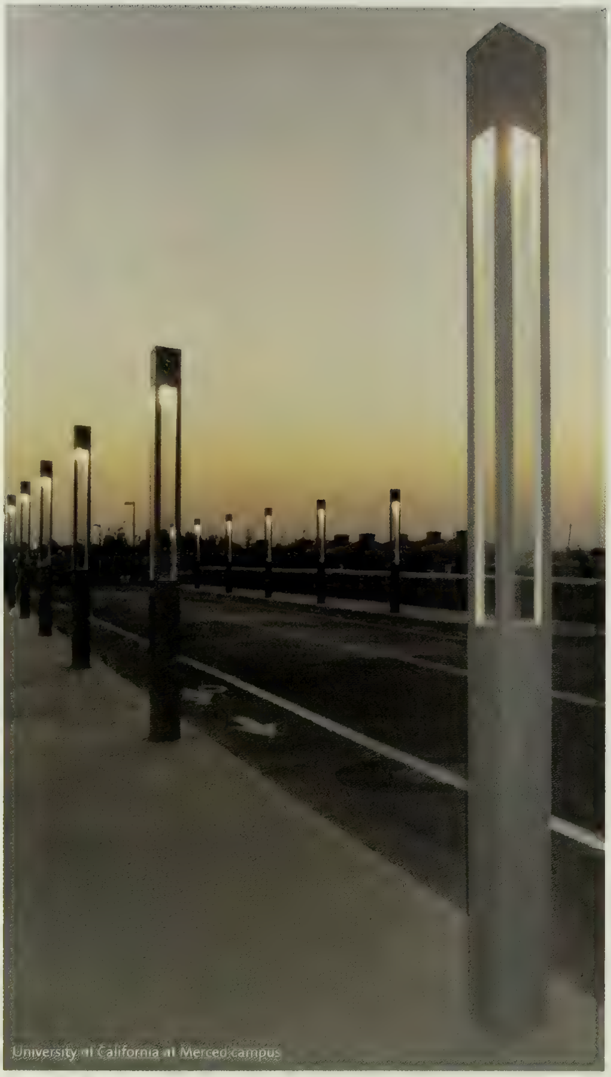
CHITECTURAL RECORD: *For your first lighting line, you have igned something versatile and ethereal. What was your inspiration?*
ANK GEHRY: Vitra asked me to create a lighting fixture, and I wanted experiment with shapes. I've always loved Isamu Noguchi's Akari nps. Recently I was working to update my cardboard/paper Easy Edges niture from the early 1970s for the company, so I thought I would do nt fixtures working with craftpaper. I love that material. Some of my t lighting prototypes are on display at Vitra [in the New York show-om]. I have working versions in my house, too. One prototype was de of irregular paper cups used for packing that we stapled together. t of course paper isn't practical for mass production, and because of ety issues, so we translated the lamp's sheathing into a treated polyester terial that is tear-free, flame-resistant, and ages well.

AR: *What about the construction of each fixture? There seems to be quite a range of configurations.*
FG: I wanted to create a lighting system that would be flexible. I figured out that if you stamp one shape and use a clip system, you can use one mold for manufacturing the sections that make up each shade. The idea is that everyone who buys a lamp can twist and mold and alter the shape until they get what they want. Later, you can alter the shape again to suit a new requirement. And you can group the lamp units together to create a chandelier, or build vertical or horizontal fixtures in different sizes. The consumer becomes a collaborator in the design.

AR: *The lamps are offered in three volumes based on the number of panels that can be clipped together: five, seven, or 10. Do you foresee any other future options for the Cloud?*
FG: We are experimenting with dyeing the skins in colors: There are red and yellow prototype versions now, and one with stripes. We might also design another mold to achieve different shapes.

AR: *Will you specify any Cloud fixtures in your own upcoming buildings?*
FG: I never use my own stuff in my projects. I feel it is unfair to specify for a client. When they ask for it, we talk about it, but only upon request.

AR: *You've also created new versions of the Easy Edges and Experimental Edges cardboard chairs and tables for Vitra. What's on the horizon?*
FG: I want to design a line of furniture for children, based on the notion of building blocks—simple shapes and splashes of color. ■



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ording to the folks at Serien Lighting, a
n without an eye-catching luminaire "is like
nadorned décolleté on the red carpet at
nes." Made for dramatic impact, the Poppy Lüster chandelier is intended for
aurants, foyers, or any location with at least 10-foot-high ceilings. Depending on
the 30 Medusa-like arms are arranged around the stainless-steel sphere, the
naire's diameter varies from 4' to 5'. The mouth-blown-glass shades come in white,
or black-violet. Serien Lighting, Fort Lauderdale, Fla. www.serien.com **CIRCLE 201**

ht-emitting-capacitor technology

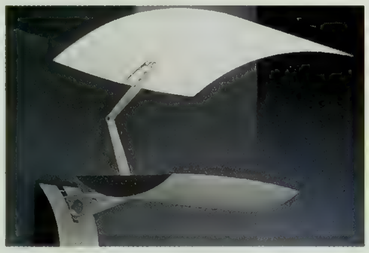
ite's flat lighting panels use light-emitting-capacitor (LEC) technology, making it pos-
e to apply lighting to floors, walls, around columns and pillars, and on unconventional
cts and surfaces indoors and out. The panels are composed of three components:
ania's high-quality light emitting phosphors for color and brightness; proprietary pro-
nmable Flatline Inverters to control levels of brightness and lifetime; and advanced
kaging materials" for lower heat generation that extends the life of the lighting.
npared to standard electroluminescent products, Ceelite claims its LEC-based light-
offers superior brightness. Ceelite, Lansdale, Pa. www.ceelite.com **CIRCLE 203**

▲ More clarity than before

Resolute has introduced two new additions to the Clarity line of lamp holders designed by Douglas Varey. The Clarity Universal Wall/Ceiling lamp features a shade that rotates 350 degrees and an elbow joint that swivels 190 degrees. The Clarity Swivel Reach lamp also has an elbow joint that swivels 190 degrees and comes in lengths of 16" to 56". The line is also available in three new colors: Aqua (far left), Red/Orange (second from left), and Chartreuse Green (third from right), shown in the pendant style above. Resolute, Seattle. www.resoluteusa.com **CIRCLE 200**

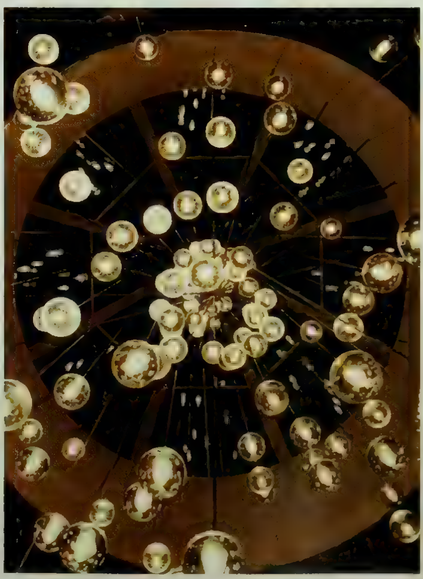
▼ Pearl of a light fixture

The Oyster family of luminaires features shallow, semi-elliptical light housings and corresponding curvilinear, winglike top reflectors. Their angle to each other can be increased or decreased to mimic the opening or closing of an oyster shell. Indirect light is aimed upward and reflects off of the top reflector to walls and into spaces below at pedestrian level. The fixtures are constructed of lightweight steel and extruded aluminum components in white or metallic-gray finishes. Luxo, Elmsford, N.Y. www.luxous.com **CIRCLE 202**



▼ Get ready to play ball

Omer Arbel has recently been named creative director for Bocci, a Vancouver-based manufacturer. Known for his award-winning furnishings, Arbel's 14 series cast-glass pendants for Bocci will be the designer's first piece of work to enter large-scale production. The 14 series is a family of low-voltage lighting fixtures made of articulated seamed-cast-glass spheres with frosted cylindrical voids, which house halogen light fixtures. Designed to be clustered in groups, the light interacts with the bubbles and imperfections in the glass to make a rich halo of light around the piece. The series has already been short-listed for several awards, including the IF Product Design Award in Hannover. Bocci plans to add more items by Arbel and other designers to the collection in the future. Bocci, Vancouver. www.bocci.ca **CIRCLE 204**



Lighting Products

▲ Glam lamps

Founded in 1999, Zia-Priven Design features a collection of glamorous pendants, sconces, table and floor lamps, finials, and accessories. Inspired by the current popularity for hand-printed wallpapers, the Wallpaper Collection includes a series of handmade-wallpaper hanging pendants in three sizes. The Dauphine large drum pendant (top left) and Red Mimosa large drum pendant (center) measures 18" x 18" x 9". The Waterfall Pendant (right) comes with a rectangular or oval shade and 75 crystal swags. Zia-Priven Design, Brooklyn, N.Y. www.ziapriven.com **CIRCLE 205**

► Art glass sconces

WPT Design offers a range of sconce fixtures with brilliant art-glass shades. The ADA-compliant Dessy series features heavy-gauge stainless steel and curved or flat handcrafted glass in a single, double, or triple candelabra design. Shown here is a stainless-steel double candelabra with Meadow front glass and Flat Almond back glass shades. The UL-listed fixture measures 19" x 11" and uses two 60-watt incandescent bulbs. WTP also offers 3D "glass on glass" in animal motifs, ideal for spaces designed for children. WPT Design, Libertyville, Ill. www.wptdesign.com **CIRCLE 207**

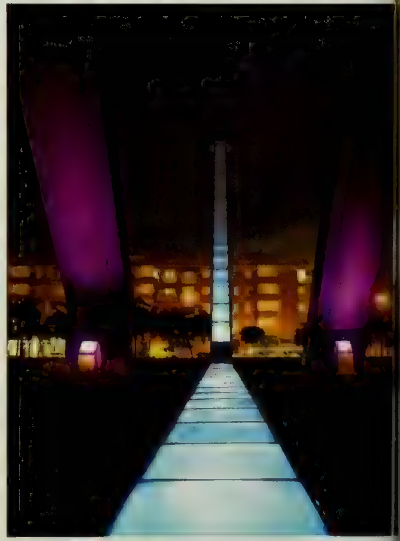
▲ Know when it's out, not when it's fading

Philips has introduced a high-pressure sodium, noncycling Ceramalux lamp. The newest addition to the Ceramalux line eliminates the unwanted "cycling" that often causes outdoor lamps to consistently turn off and on at the end of life, making it easier to determine which lamps should be replaced. The new lamp passes the EPA's TCLP test for nonhazardous waste, and contains up to 90 percent less mercury than a standard Philips Ceramalux lamp. Philips Lighting, Somerset, N.J. www.philips.com **CIRCLE 209**

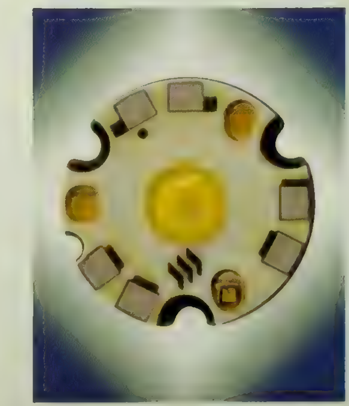
◄ Crystal clear luxury

The Curios collection, from legendary French glassmaking company Lalique, draws its inspira-
tion from the Vizcaya Museum & Gardens in Miami, which were recently damaged as a result of Hurricane Wilma. Crafted in gold and silver plating, the accessories and lighting in the collec-
tion are interpreted in the luxe medium of Lalique crystal. The Jaffa grouping includes a vase in crystal with a silver metallic finish, a desk lamp i
clear crystal and polished and brushed metal, a ceiling light in clear crystal, a votive holder in clear crystal and brushed metal, and a chandelie
(shown) with 5, 10, or 20 lights or a "stemmed" chandelier with 20 lights, both in clear crystal and polished and brushed metal. Lalique, New York City. www.lalique.com **CIRCLE 206**

► Illuminating sculpture



This outdoor sculpture in Cornellá, Spain, is illuminated by Martin Architectural's Exterior 600, Exterior 200, and Exterior 200 Long Barrel wash lights, whose colored beams contrast with the sculpture's stainless steel, steel cuts, and glass plates. The work, an enormous inclined frame divided by an illuminated vertical element, is located in a public park. The illumination schemes are controlled by a Martin PC-based LightJockey. Martin Architectural, Woodland Park, Colo. www.martin-architectural.com **CIRCLE 208**



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million colors, including varying shades
white. The two offerings are designed around Lamina's chip-on-board packag
technology, which enables multiple LE
to be clustered closely together, resulti
in a high light output in a very small fo
print. Lamina Ceramics, Westampton, N
www.laminaceramics.com **CIRCLE 210**

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The AIA awarded the **2006 CES Award for Excellence** to the following three recipients. This awa honors CES Providers and their commitment to an overall system of quality programming. T award criteria involved a detailed review of the organization's strategy, planning and analys design, implementation, delivery, evaluation, and improvement process of their continuing educati programs. We are pleased to announce the following winners.

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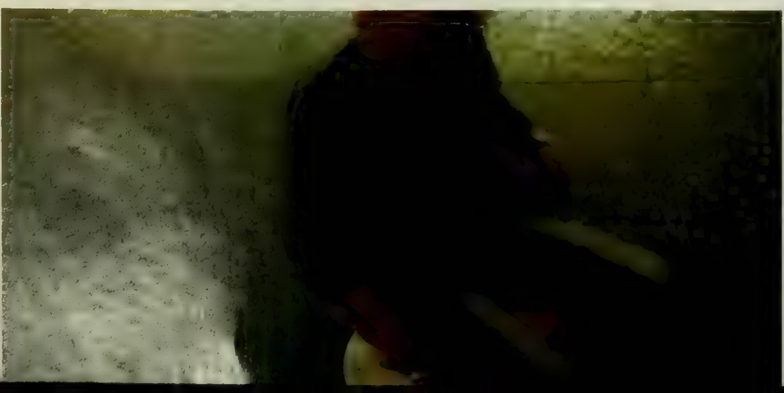
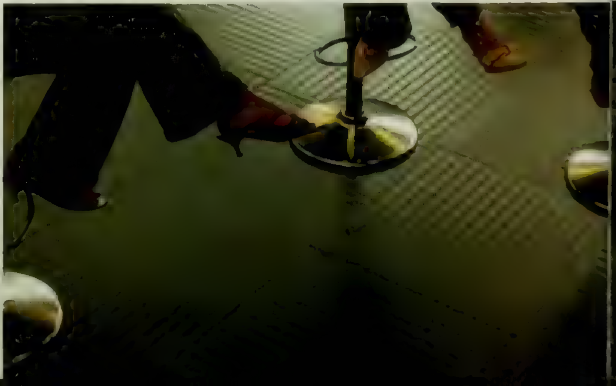




Products

Flooring: Wood, Resilient & Concrete

This month's **flooring roundup** includes new offerings in vinyl, wood, bamboo, and concrete. For the latest trends in the flooring industry, check out the **Surfaces show**, held from 1/31–2/3 in Las Vegas, or the **Coverings tile and stone expo**, to be held from 4/4–4/7 in Orlando. *Rita Catinella Orrell*

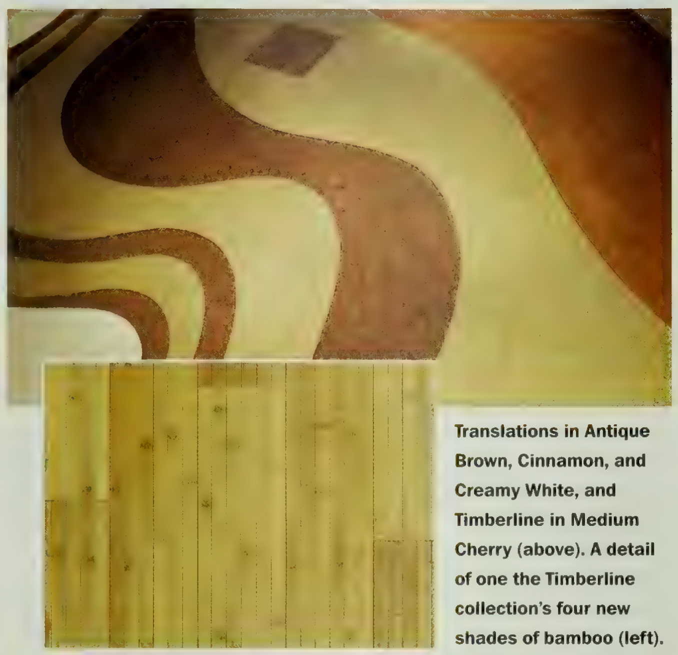
mmercial resilient flooring lines updated

nstrong Commercial Floors has ated several resilient flooring ections, including the Timberline, ndard Excelon, Translations, and nmission Plus product lines.

Exotic wood visuals have been ed to the Timberline group, com- ing four shades of bamboo and e variations of wenge, along with other options, including rustic ch, walnut, and cherry. The color ette for the Standard Excelon VCT ection has been increased by 16 e colors. Both products meet urrent ASTM guidelines and ure a new urethane coating for eased durability. The floors are FloorScore certified, meaning meet stringent indoor air quality uirements.

The Translations line features a classic marble visual in a range of colors and three seaming methods. Ideal for retail, education, healthcare, and other applications, the heterogeneous sheet flooring has expanded to a palette of 24 calm neutrals and bright accents.

Finally, the refreshed Commission Plus collection is ideal for spaces that need a residential look combined with light-commercial performance, such as assisted living. Armstrong has nearly doubled the product line, which now includes 30 SKUs, including a wide variety of decoratives, stones, slates, and woods. Armstrong Commercial Floors, Lancaster, Pa. www.armstrong.com CIRCLE 211



Translations in Antique Brown, Cinnamon, and Creamy White, and Timberline in Medium Cherry (above). A detail of one the Timberline collection's four new shades of bamboo (left).

oors that replicate metal, concrete, leather

ovision Flooring's Artwalk vinyl et flooring features metal cts that replicate the look of nless steel and metallic paint, listic textured leathers, and ncrete visuals for a range of nmercial interiors including ail, education, government, and spitality installations. Available 9" x 49' size, with gauges of 6" (metal collection) and .087" ther and concrete collections), collection's 12 contemporary tal visuals and 16 concrete and leather color combinations offer specifiers a broad selection. In addition to Artwalk, Innovision offers five other flooring collections: Naturelife heterogeneous sheet flooring, Deco Stone/Wood vinyl tile flooring, Neovia vinyl tile flooring, and Static Pulse ESD (electrostatic discharge) flooring. Innovision Flooring, Kenilworth, N.J. www.lgflooring.com CIRCLE 212

The collection includes concrete (left) and metal (right) visuals.

Strand bamboo floor offers 30-year warranty

The strand bamboo flooring from S&W International Group, a manufacturer and installer of bamboo flooring, offers a floor that is twice as hard as red oak and 80 percent harder than hard maple. A quick-growing grass, bamboo takes just five to six years to grow, rather than at least 25 years needed to grow a tree.

S&W offers three types of bamboo flooring: traditional, strand woven, and click-on glueless. Traditional and glueless bamboo flooring each feature a 20-year warranty, while strand-woven bamboo offers a 30-year warranty. Bamboo is available in two colors: natural, which is similar to maple, and coffee, which is a darker color created with a high-temperature, high-pressure treatment.

Bamboo's durability makes it a good floor surface for high-traffic areas such as stairs. S&W claims to be the only company that offers decorative items such as medallions, inlays, borders, baseboards, stair treads, and flush floor vents in bamboo. Two colors of bamboo flooring, along with medallions, inlays, and borders, were used on the stairs shown below. S&W International Group, Elk Grove, Ill. www.sw-intl.com CIRCLE 213

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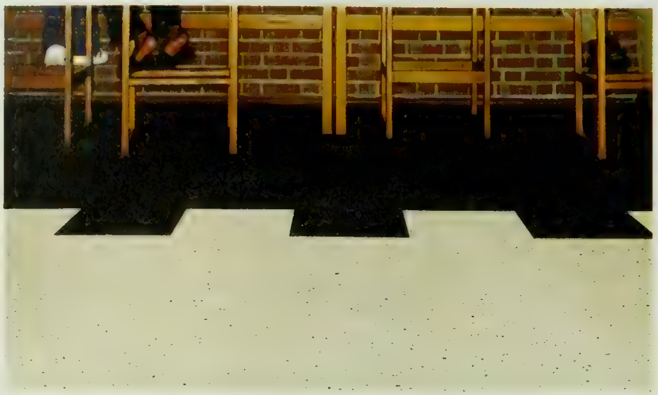
Flooring: Wood, Resilient & Concrete



▲ Terrazzolike solid vinyl tile

Milano and Milano SR solid vinyl tile from Azrock offers an upscale look while providing a slip-resistant option that is easier to maintain while using less water and chemicals. Ideal for heavy-use areas such as school foyers, hotel lobbies, and retail chain stores, the flooring costs less than luxury vinyl tile and terrazzo products and requires only dry buffing, making it easy to maintain. Available in a wide range of colors, as well as slip-resistant options, Milano replicates the look of terrazzo with multidimensional chips that give it depth. Tarkett Commercial, Houston. www.tarkett.com **CIRCLE 214**

► Three ways to safety

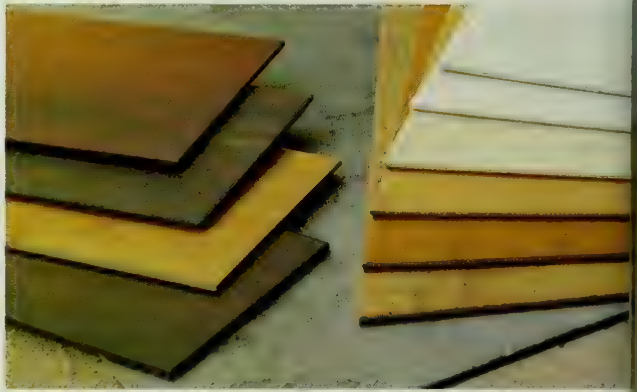
Available in three finishes, Altro's new Imprint safety flooring collection is ideal for high-traffic public areas such as receptions, corridors, and cafés. Inspired by the texture of snakeskin, Altro Imprint Cobra features a shimmering textured pattern. Altro Imprint Tectonic incorporates the pure form of a circle overlaying the larger pattern, while Imprint Pico features small, randomly spaced shapes. Altro, Mississauga, Ontario. www.altrofloors.com **CIRCLE 217**

▼ Monolithic concrete tile options

Maxx Architectural Concrete is integrally colored monolithic tile ideal for commercial environments. Sixteen vibrant colors are available in a range of thicknesses, sizes, and shapes, including square, rectangular, and "trapezium"-shaped tile (shown on wall), which offers new compositional choices for wall and floor applications. Tiles come in smooth or textured finishes. Architectural Systems, New York City. www.archsystems.com **CIRCLE 218**

► Sound-deadening laminate floor

Sonic Floor is a new sound-deadening laminate flooring from Kronopol. Beneath the top surface, Sonic Floor is equipped with an integral underpad made of felt and rubber. Independently field-tested on concrete using ASTM methods for sound-reduction rating, the floor was found to significantly diminish impact noise. The laminate is made with wood from FSC-certified forests, and emits a very low amount of VOC and formaldehyde emissions. Kronopol Laminate Flooring, Ontario. www.kronopol.com **CIRCLE 215**



▲ Luxe vinyl tile collection

Mannington Commercial's new Luxury Vinyl Tile collection, Nature's Paths, is a collection of wood and other natural surface visuals. A tough urethane topcoat ensures superior stain-resistance as well as lower maintenance. A proprietary process, NatureForm Optix, combines the latest advances in imaging, texturing, and finishing to create authentic wood- and stone-textured resilient products. Mannington Commercial, Calhoun, Ga. www.mannington.com **CIRCLE 216**

◄ Widest color range

Preverco has introduced four ne stains for its yellow birch hardwood floors—Cognac, Bourbon, Toffee, and Java—in addition to its eight original colors. Accordi to the manufacturer, this is the widest variety of colors for yello birch in the North American har wood flooring industry. A versat species of wood that presents a alternative to red birch and red hardwood, Preverco's yellow bir has a similar hardness level to oak. Preverco Hardwood Floorin Quebec. www.preverco.com **CIRCLE 219**

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Whether you're looking for the tranquility and balance found in nature or the bold geometry of a city skyline, you'll find it in our new rubber tile textures. And like all Johnsonite solutions, they give you long life, easy maintenance and superior slip-resistance. High-performance solutions for high-performance environments. 800.899.8916 www.johnsonite.com

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New Life for th
'Big Easy'

An international competition for new housin
in New Orleans

Sponsored by *Architectural Record* and McGraw-H
Construction in partnership with Tulane Universi
School of Architecture

New Orleans. The Crescent City. Now, wounded by Hur
Katrina–leaving in its wake widespread damage to h
lives, and futures–needs your 'hearts and minds' to rea
re-envision and redesign the region's housing. To b
new life and rebuild lives.

Architectural Record and McGraw-Hill Construction, in pa
ship with Tulane University School of Architecture, invite
submit your ideas to help design the future of New O
Participants in this competition will design housing f
actual block in the city of New Orleans. Winning designs
published in *Architectural Record* and presented at the
AIA Convention and Expo. Selected submissions will app
McGraw-Hill Construction web sites.

Programmatic elements include:

- Single family housing
- Multi-family housing
- Mixed-use urban planning

Other programmatic elements:

- This competition encourages close attention to issues o
  sustainability, both in urban planning and architectural de
- Contestants are encouraged to incorporate modular or p
  ricated building products and processes wherever possi

Important Note: While the competition welcomes vision
hypothetical proposals, contestants are encouraged to c
that New Orleans faces a severe and immediate housing
and is in need of practical, affordable solutions to this prob

Competition Entry:

Go to **www.architecturalrecord.com** for submission r
ments and more specific programmatic information. Com
specifics will be included in the competition packet. All
must be received no later than **March 1, 2006.**

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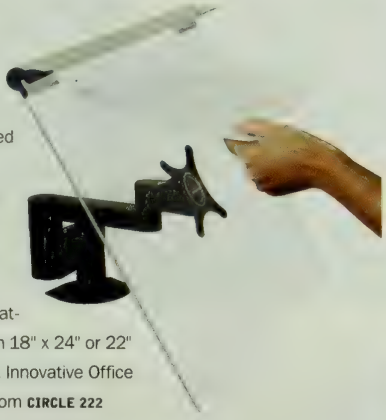
'roduct Briefs

eggy table collection

oni's Leg collection combines chromed- or satin-finished frames with tops in wood, red glass, or melamine. The design features a tubular steel frame with a central n available in polished chrome or a satin-finished nickel color. The unusual leg ɔes run into rounded feet that offer stability. The ½"-thick glass tops come in six rs; the melamine-finished tops imitate the appearance of honey maple, ice maple, enge; and the veneer-finished tops come in birch, red cherry, or sepia cherry for a ner look. Luminaire Contract, Miami. www.luminaire.com **CIRCLE 220**

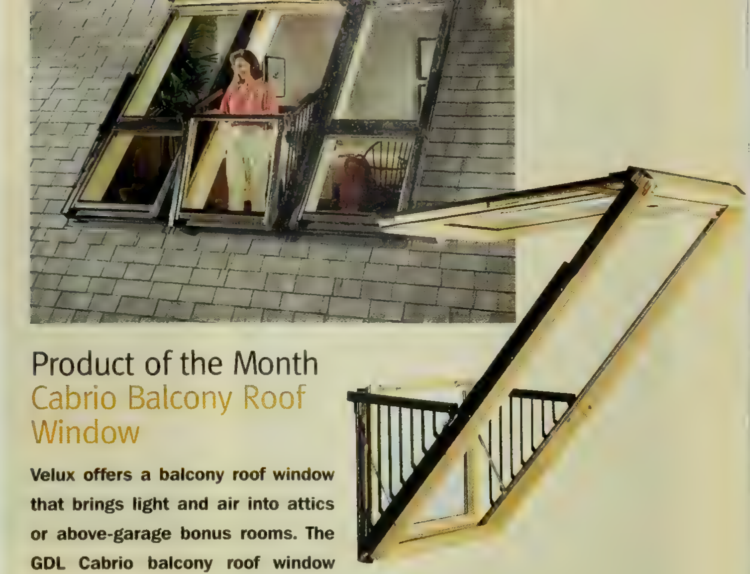
landy desk accessory



ɹMount helps engineers, archi- ;, and industrial designers ate their workspace from over- blueprints and drawings. Designed ɔnjunction with an ergonomist, ɹMount's floating radial arm sus- ds large documents above the ‹ and incorporates a mechanism grasps and releases up to 15 ɜts of paper without clips. The rotat- and transparent holder comes in 18" x 24" or 22" ." sizes and six mounting options. Innovative Office lucts, Easton, Pa. www.lcdarms.com **CIRCLE 222**

/ings of security

ırter Security Systems introduces the new Fastlane GlassWing speedgate that bines speed, accuracy, and tailgater detection with glass barriers that recess the pedestals for authorized personnel. Every Fastlane unit has a microprocessor that is programmed with advanced neural network algorithms that allows the system to catch intruders trying to sneak into a building while ignoring most nonhuman objects, such as briefcases, umbrellas, or other items that trigger alarms in competing systems. Smarter Security Systems, Austin, Tex. www.smartersecurity.com **CIRCLE 223**



Product of the Month
Cabrio Balcony Roof Window

Velux offers a balcony roof window that brings light and air into attics or above-garage bonus rooms. The GDL Cabrio balcony roof window features an exclusive dual-sash operation: The top sash opens for maximum ventilation and also pivots completely inward for easy glass cleaning from inside the room, while the bottom sash opens outward, creating a roof balcony. When the balcony roof window is closed, a ventilation flap allows fresh air circulation for heat-collecting upper areas of the home, and floor-to-ceiling low-E laminated glass brings daylight into the space. Designed for installation in roof pitches from 35 to 53 degrees, the balcony window can been installed for less than the cost of traditional dormers. Optional insect screens and sunscreen accessories are available, including manual light-block shades, venetian blinds, pleated shades, and roller shades. Velux America, Greenwood, S.C. www.veluxusa.com CIRCLE 221

▼ Get pulled in this direction

Idaho-based Rocky Mountain Hardware manufactures high-quality, solid bronze architectural hardware for doors, cabinets, baths, and kitchens in upscale resorts, restaurants, hotels, corporate offices, and residences. Each Rocky Mountain hardware piece can be custom made to replicate a special architectural detail of a project, a favorite icon, or a company logo. Inspired by the organic texture and strength of rope, the solid bronze Lariat Pull features numerous hand-applied patinas (bronze patina shown) that mature over time to a rich hue. Lariat Pulls are available in 7", 10", and 16" lengths, in Silicon or White Bronze, and with seven patina options. Rocky Mountain Hardware, Hailey, Idaho. www.rockymountainhardware.com **CIRCLE 224**

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Product Briefs

◄ Breaking the mold of brick veneer

Introduced at last month's International Builder's Show in Orlando, Eldorado Stone's new line of brick veneer product is handcrafted using precise molds of authentic European bricks specifically selected for their shape, texture, and color, then finished by hand and tinted by highly trained artisans. Four profiles and 14 colors are currently available, including RomaBrick, a longer profile that is irregular in shape and can vary from 9" to 10" long. The brick shown here is in Bracciano, a warm color blend of subtle reds and burnt blacks, creating an Old World look and feel. A range of accents and accessories has also been added. Eldorado Stone, San Marcos, Calif. www.eldoradostone.com **CIRCLE 225**

► Glass door system

Shown here in a Manhattan auto dealership, the Manet Compact system by Dorma Glas can be used on ⅜" and ½" sliding and pivoting tempered glass doors. It features stainless-steel fixtures and components to render a clean, Modern aesthetic for corporate offices, meeting facilities, and other applications. Components that attach directly to the glass surface feature strong, flush-fitting, single-point fixings that deliver an uncluttered appearance and safely transfer all forces acting on the glass to the load-bearing structure. The door system features an unconventionally designed visible center pivot that extends the entire length of the door. For sliding doors, the system offers sliding door rollers that hang from sliding track tubes, guide rails, clamp fixings for the track tube, door handles, and locks. Dorma Group N.A., Reamstown, Pa. www.dorma.com/usa **CIRCLE 226**

▲ Racier raceway system

Wiremold/Legrand has introduced the next generation of perimeter metal raceway for wire and cable management. Designer Series 4000 steel raceway features a streamlined curved surface and a wider selection of colors. The raceway has also been designed to minimize the visual impact of plugged-in wires and cables through an optional downward-facing configuration for receptacles and data jacks. Ideal for educational buildings and offices, the new raceway is available in standard designer colors, including ivory, gray, black, and bronze. Wiremold/Legrand, West Hartford, Conn. www.wiremold.com **CIRCLE 227**

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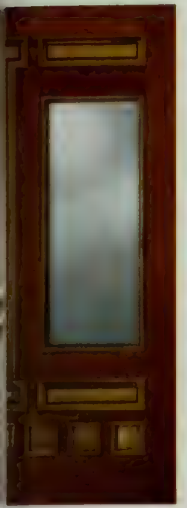
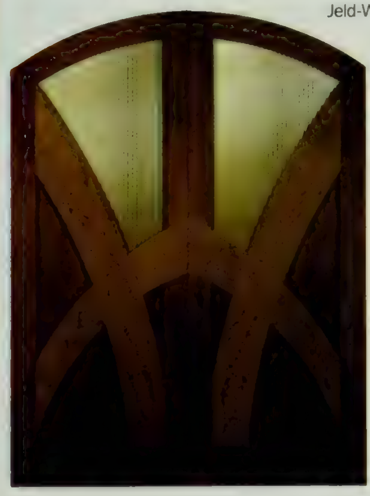
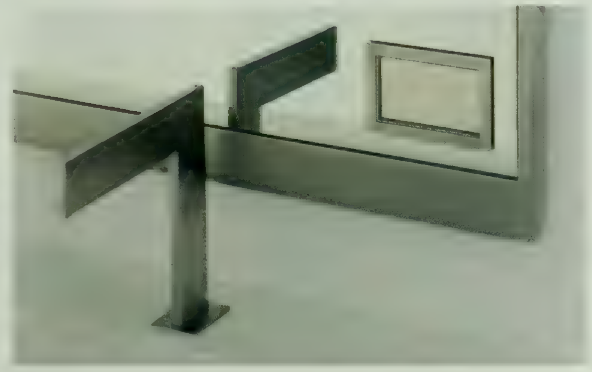


◄▼ Opening the door for young designers

Brandi Berryman and Amanda Hardaway, two architecture students from the University of Kentucky at Lexington, each won a $2,000 scholarship and a trip to last month's International Builder's Show as part of Jeld-Wen's first Student Door Design Contest.



Jeld-Wen invited students from around the nation to submit their designs last fall, and along with a jury of design professionals (including a representative from RECORD), selected three scholarship winners. Berryman designed her door with the idea of luck in mind and the visual of crossed fingers (near left), while Hardaway's love of architecture inspired her Art Deco motif design (far left). Jonathan Tucker, an architecture student at the University of Colorado at Boulder, received a first place scholarship of $2,000 for his double-door design. Jeld-Wen, Klamath Falls, Ore. www.jeld-wen.com **CIRCLE 228**



► step toward the other
sl of the looking glass

Ru etterie Ritmonio's latest collec-
tic ianconiglio ("White Rabbit"), was
in ɘd by the idea of looking through
th ner side of the looking glass.
De ned by Davide Vercelli, the system
nc ly features a new tap design, but
a system of managing water in the
hc Bianconiglio places a box inside
th all to regulate the temperature,
wl is controlled by a thermostat
se r found on a tactile interface. On
th ane, a grid of optical sensors determines 40 points with different delivery and temperature conditions, individualized
by inous dots. The control surface can be placed independently near the fitting or integrated into the surface of a
m . and is turned on by a touch of the finger. The manufacturer hopes the system will help users monitor their water
us nd in turn, take steps toward conservation. Lacava, Chicago. www.lacava.com **CIRCLE 229**

▼ ilding a strong foundation

La September, concrete producer Prairie Material Sales, along with chemical admixture supplier Degussa
Ac tures, collaboratively designed a Rheodynamic Self-Consolidating Concrete (SCC) mix that would be used for the concrete foundation of the Trump International Hotel and Tower superstructure in Chicago, making it the largest single SCC pour in North America to date—more than 30 ready-mix trucks from Prairie Material Sales made 600 trips to the Trump Tower site. SCC has a strength of 10,000 psi produced on a continual basis. Expected to be completed in 2009, the building will be 92 stories high and consist of more than 2.6 million gross square feet of building area and more than 180,000 yards of concrete. Degussa Admixtures, Cleveland. www.degussa.com **CIRCLE 230**

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w archrecord.com, under Products, then Reader Service.

The finishing touches you choose are often the details most appreciated for both function and beauty. The Italian marble sinks, the Mexican porcelain backsplash, the Canadian sandstone counter tops, the Spanish brushed travertine floor with one-of-a-kind artisan tile inlays from Arizona.

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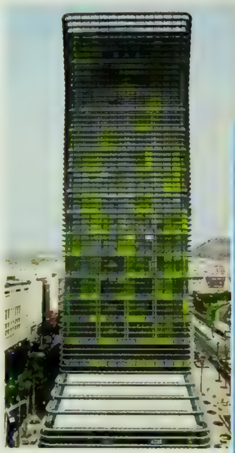
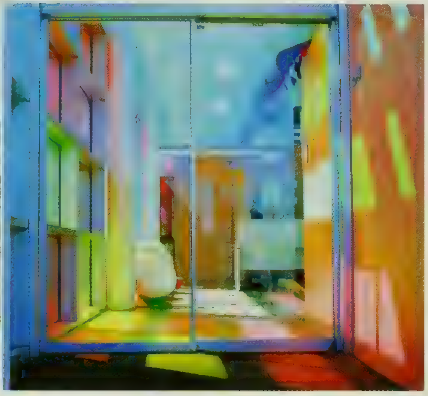
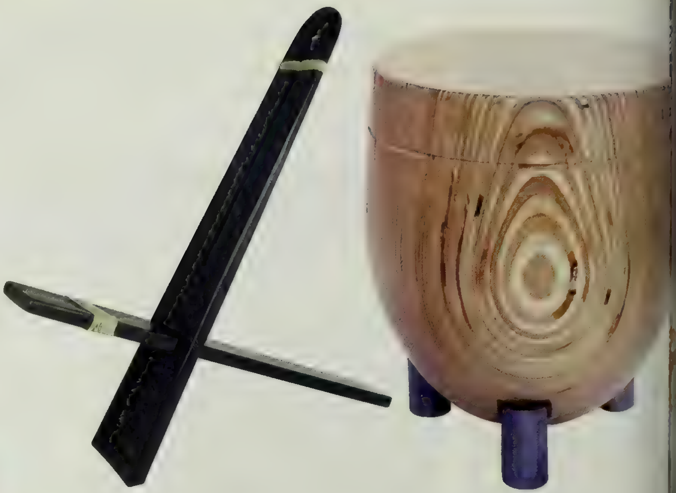
▼ Colorful laminations

Bold use of color dominated the entries for the 2005 Solutia International Design Awards, which honor excellence in designing with laminated glass. The architecture winners include the Woermann Tower (left), a mixed-use retail and residential center in Gran Canaria, Spain, that features hues of yellow Vanceva interlayers used throughout the facade to provide safety, security, and wind-resistance, and La Casa de Mamá (right), a children's center in Guadalajara, Spain, surrounded by brilliant blue, green, red, pink, yellow, and orange Vanceva color interlayers. Solutia, St. Louis. www.solutia.com **CIRCLE 231**







▲ Contemporary African furnishings

Launched at the 2004 Architectural Home Design Show in New York City, Berchuma is a signature furniture line created by Jomo Design. Founded by Jomu Tariku and Henock Kebede, the collection's name is an Ethiopian word for stool or small chair, and in fact, the line includes a series of stools and small chairs inspired by African furniture design and art. Intended to fill the gap in a marketplace full of Continental European, Classic American, Asian, and Scandinavian designs, the traditional feel of the product line bears a contemporary touch through different methods of craftsmanship. Current designs include the Birth chair (left) made of Ebonized Cherry, and the Duka stool (right), made of Baltic Birch and aluminum, both designed by Adiskida Ambaye. Berchuma, Alexandria, Va. www.berchuma.com **CIRCLE 232**

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American Institute of Architecture Stude

The design studio lies at the core of architectural education. The experiences, habits and patterns found within the studio make up what we have termed, "studio culture." Design studio teaches critical thinking and creates an environment where students are taught to question all things in order to create better designs.

The experience of a design studio has also driven away good people or genuinely and unnecessarily insulted many in the formal process of learning. The AIAS believes we can improve the way students are educated which will lead to better designers.

The efforts of the AIAS to have the entire profession of architecture think critically about the studio model of education, has recently made remarkable pr
In coordination with our partners (AIA, ACSA,
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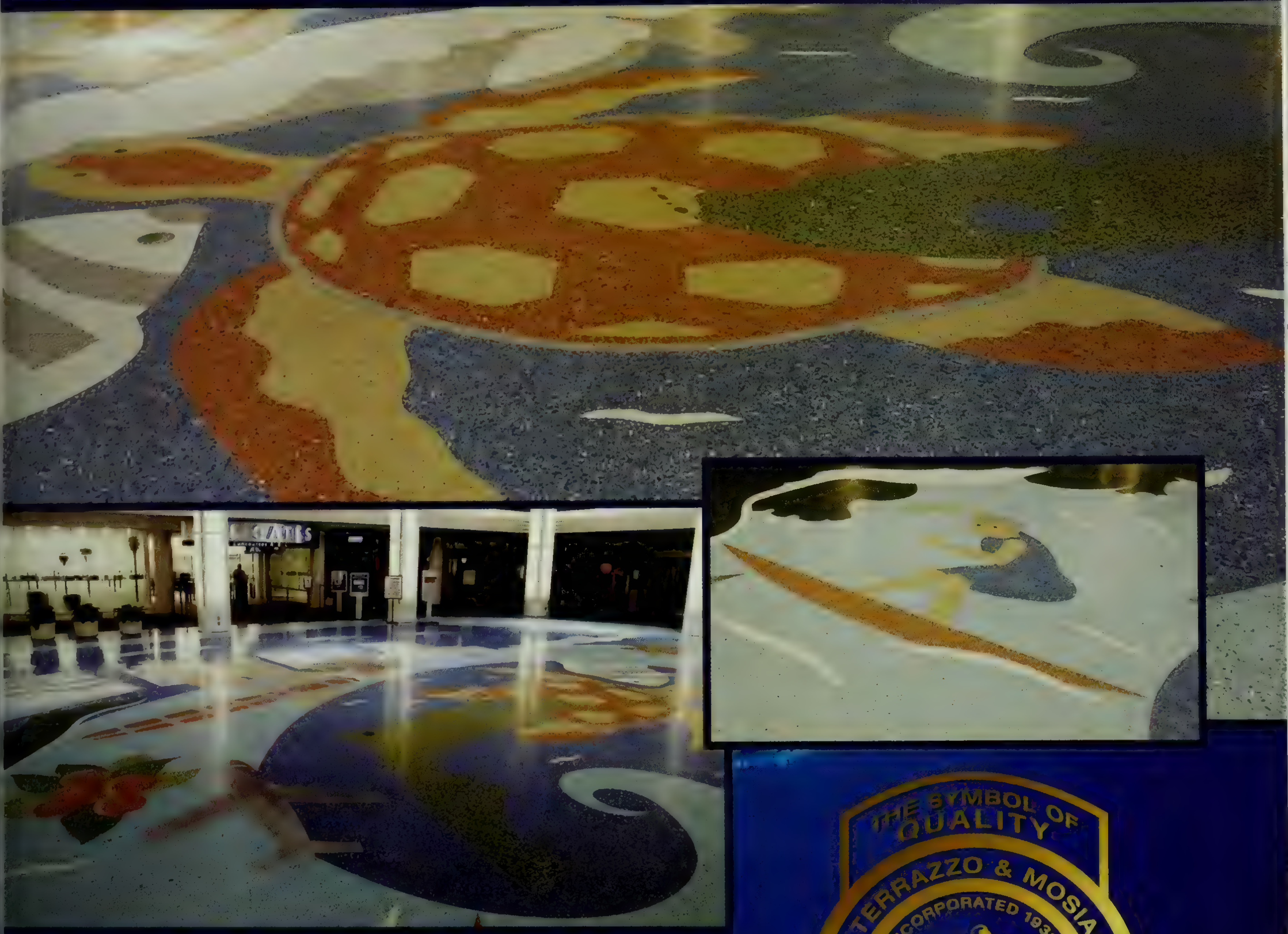

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Jo Name: Jacksonville International Airport
A itect: Reynolds, Smith & Hill

Location: Jacksonville, Florida
Photographer: David Laudadio

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Product Briefs

► Shady fabrics

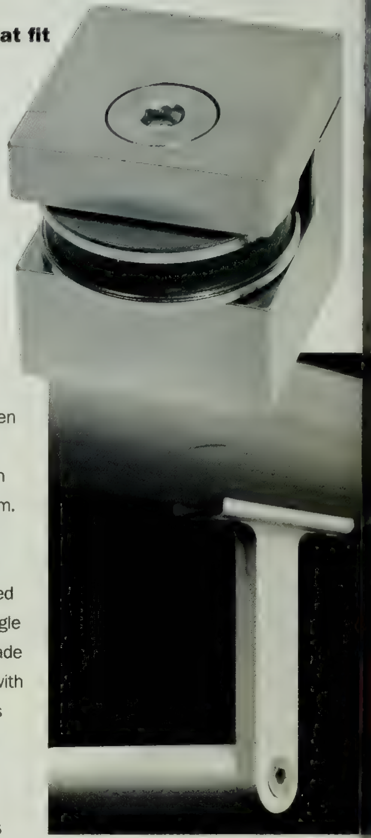
Shades and Screens is a new collection of decorative textiles created for the shade and privacy-screen market. Available in 78", 106", or 118" widths, the fabrics can be railroaded and hung vertically or horizontally. The collection includes seven patterns that are knitted, not woven, for dimensional stability, which ensures the edges will remain stable even when suspended. Designtex, New York City. www.dtex.com **CIRCLE 233**

◄ Thermal insulation board

The extruded polystyrene foam composition found in Energy Star–rated GreenGuard SL Insulation Board from Pactiv provides a high R-value (5.0 per inch of thickness), resulting in increased thermal protection in foundation and basement applications. Available in thicknesses ranging from 1" to 2", each 2' x 8' or 4' x 8' section of board is tough enough to withstand the rigors of the job site, yet is lightweight and easy to cut and install. Pactiv, Lake Forest, Ill. www.pactiv.com/green-guard **CIRCLE 234**

► Hardware fittings that fit

Designed and made in New Zealand by hardware specialists Halliday+Baillie, Ironmonger offers several new fittings, including a locking flush bolt, a stair rail fitting, flush pulls, and magnetic stops. While the square (top) or round magnetic door stops prevent a door from slamming into the wall with a sturdy two-point floor installation, they also keep it held open with a strike plate fixed to the door. The stops are available in a satin pearl finish on aluminum. The handrail bracket (bottom) features a simple bracket and post to which a wood rail is fixed that can be installed at any angle to match the staircase. It is made in a satin pearl chrome finish with stainless-steel fasteners and is suitable for interior or exterior applications. The Ironmonger, Chicago. www.ironmonger.net **CIRCLE 235**



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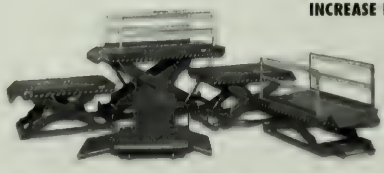

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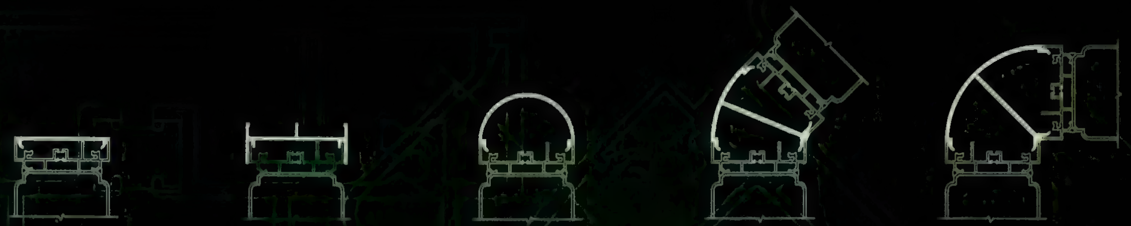

WE'VE CREATED AN INGENIOUS WAY TO JOIN PANELS AND PARTITIONS. NOT TO MENTION ARCHITECTS AND BUILDERS.

45-degree corner caps were used to connect Hy-Lite panels to form this neo-angle shower. Flat caps were used to finish off the top and sides of the doorway, while a flat cap and mounting channel were used to attach the panels to the curb and wall.

Aluminum accessories from Hy-Lite® make it easy for everybody to see eye to eye. That's because they make joining our prefabricated, ready-to-install panels, partitions and radius walls remarkably fast and easy. Panels and partitions can be joined at 45- and 90-degree angles, allowing builders and architects to specify Hy-Lite acrylic block systems in almost any conceivable configuration. Accessories are also available to connect angled walls, to seamlessly join panels, and to beautifully finish the ends of a panel or partitions. With aluminum accessories from Hy-Lite, discovering your imagination is easier than ever. To locate a supplier, call 1-877-712-4013 or visit us at www.hy-lite.com.

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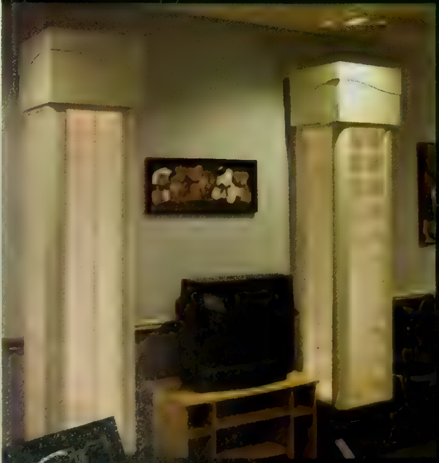
Round caps finished off the ends
perfectly. Aluminum mulls were
the three radius walls together,
mounted the units to the top o



90-degree corner caps were used to connect four acrylic block panels together to form decorative, lit towers. The panels were mounted to the base and top piece with flat caps.

Aluminum mulls were used to co
panels and radius walls together
mounting channel were used t
the base and the walls. Flat
to connect the desktop to the

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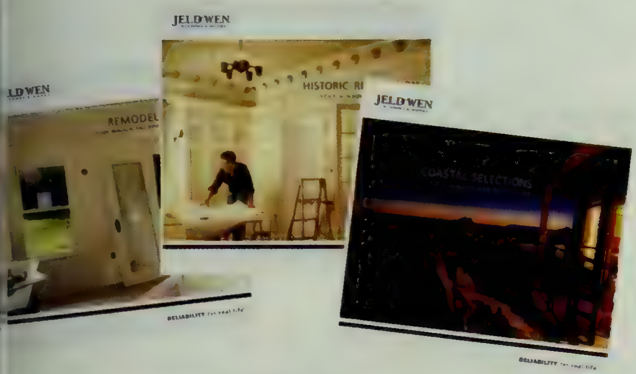
Product Resource: Literature

Inlay/parquet flooring

Oshkosh Designs has introduced a new design manual that provides detailed information about the company's full line of wood and stone inlay products and parquet flooring. The manual includes full-color images, technical specifications and product illustrations, and a product reference guide. Oshkosh Designs, Winneconne, Wis. www.oshkoshfloors.com **CIRCLE 236**

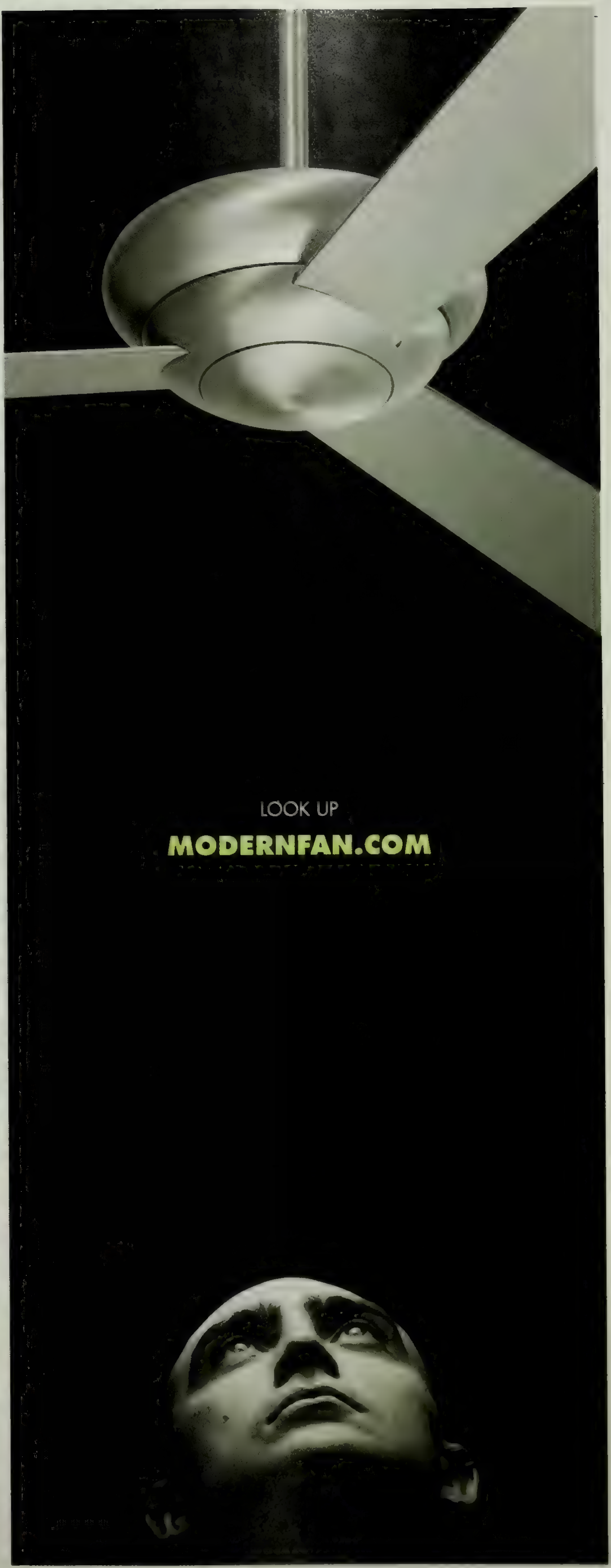
ating catalog

Fit Engineered Products' new 36-
e catalog, *Engineered Seating for
ductivity*, features hundreds of
ting products, including chairs,
ols, and footrests for offices, labs,
ools, and other applications.
rmation includes standard features
ach model plus options such as
cial backrests, seats, armrests,
ergonomic controls. BioFit
ineered Products, Waterville,
. www.biofit.com **CIRCLE 237**



ee window and door resource guides

d-Wen offers three new resource guides that highlight a variety of appropriate
-Wen product options for different themes: The *Coastal Selections Guide*
uses on hurricane-area requirements and energy-efficient products that will
hstand harsh coastal climate conditions; the *Historic Restoration Guide* presents
dows and doors that complement classic architectural styles, such as Craftsman,
World, Victorian, and Colonial; and the *Remodeling Guide* presents affordable,
able features such as energy-efficient low-E glass and AuraLast wood. Jeld-Wen
dows & Doors, Klamath Falls, Ore. www.jeld-wen.com **CIRCLE 238**



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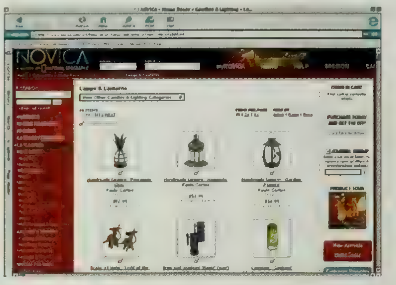
Product Resource: On the Web

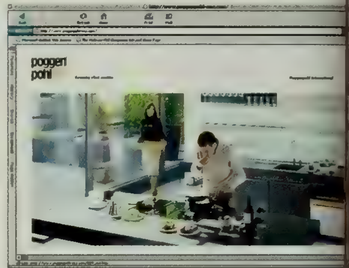
www.novica.com

Part of the National Geographic family, Novica.com is an online "world marketplace" that unites customers with more than 2,000 master artisans from around the world. Founded six years ago, the site allows visitors to select from thousands of handmade gifts, jewelry, and home decor pieces, including furniture, lighting, and area rugs. Each item comes with a biography of the artisan who made it.



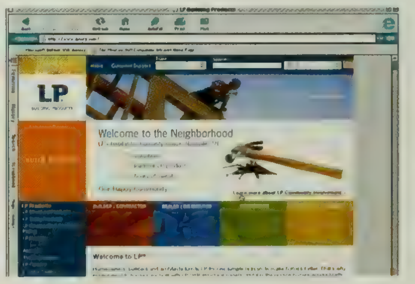
www.poggenpohl-usa.com

Luxury kitchen manufacturer Poggenpohl has redesigned its Web site under a new domain to reflect the brand's upscale image. The multipage site includes a showroom locator, specific product information, a section on luxury condominium projects featuring Poggenpohl kitchens, a secure online ordering system for catalogs, information on sample displays for sale, and the latest corporat news from the German manufacturer.



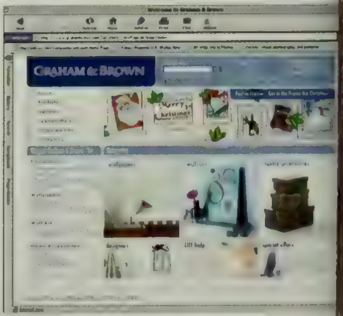
www.lpcorp.com

Louisiana-Pacific has launched a redesigned Web site that showcases its full array building products under the LP brand. Customized Web pages address the specific needs of a variety of site visi-tors, including building-produ distributors, builders, architec and homeowners. A new inte active online application allo visitors to design a backyard WeatherBest deck using the "Sketch-a-Deck" tool, or to visualize a home in a range LP siding colors.



www.grahambrown.com

A selection of Graham & Brown's wall coverings, borders, digital murals, hand-painted canvases, and decorative accessories are now available directly from the British manufacturer's Web site. Visitors can shop by designer or wallpaper type, order samples online, and find out about special offers.



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http://archrecord.construction.com/features/bwarAwards/

Entries must be postmarked no later than May 15, 2006.

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Dates & Events

w & Upcoming hibitions

am Machines:
Inventions of R.G. Martelet
cago
ruary 3–March 25, 2006

e 1960s, Ron Martelet was one of the test product designers at Sears, Roebuck Company, where his futuristic designs were ted with the potential of being realized. His gns for snowmobiles, jet skis, golf carts, power boats will be featured in a special bition and sale. At ArchiTech Gallery of itectural Art. Call 312/475-1290 or visit v.architechgallery.com.

ns of Western Pennsylvania
tsburgh
ruary 4–May 28, 2006

pite rampant suburban sprawl in Western nsylvania, 29 of the 33 counties in this half of state are classified as rural, and agriculture ains a leading industry. Barns are thus an ortant component of this region's landscape, vell as extremely evocative icons in the popunind. This exhibition traces the development arns in the region from the late 18th century ne present through an exploration of their ns, functions, technological evolution, and role barometers of change in the agrarian econ/. At the Heinz Architectural Center. Call /622.3131 or visit www.cmoa.org.

no Mathsson: Designer and
hitect
ckholm
ruary 9–August 27, 2006

no Mathsson (1907–88) developed dernism in furniture design and architecture, lressing both general and special problems in design of furniture, interiors, and buildings. exhibition focuses on his well-known furnie designs as well as his lesser-known nitectural endeavors, which include a large nber of single-family dwellings, terrace ises, schools, factories, and exhibition gales. At the Swedish Museum of Architecture. Call 46 0 8 587-270-00 or visit www.arkitekturmuseet.se.

On-Site: New Architecture in Spain
New York City
February 12–May 1, 2006

Featuring 53 noteworthy architectural projects, this exhibition focuses on the most recent architectural developments in a country that has become known in recent years as an important center of international design experimentation and excellence. At the Museum of Modern Art. Call 212/708-9431 or visit www.moma.org.

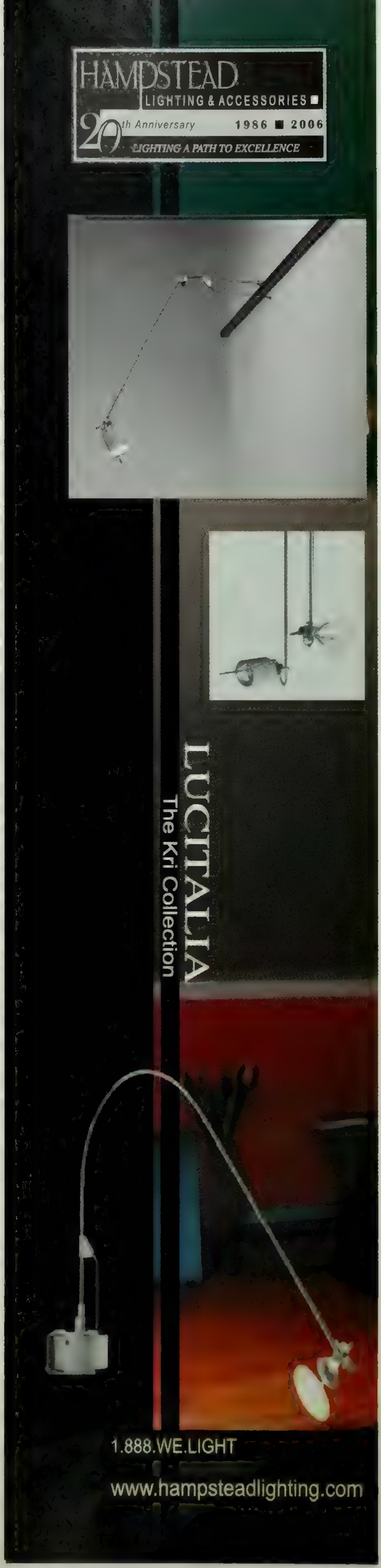
Architectural Art
Atlanta
February 13–March 30, 2006

Presented by the Foundation for Community Arts, exhibitors include Kenneth von Roenn, Walter Gordinier, Seranda Vespermann, Susan McCracken, Arthur Stern, Christian Culver, Chrisitina Lihan, Katherine Linn, AIA Georgia's Best of 2005. Also on view is a niche exhibition of the art of landscape design. At Mercer University Brown Art Gallery. Call 678/547-6280.

Prairie Skyscraper
New Haven
February 13–May 5, 2006

A traveling exhibition showcasing Frank Lloyd Wright's only skyscraper, Price Tower. Now celebrating its 50th year, the 19-story building in Bartlesville, Oklahoma, was an exemplar of one of Wright's ideals: a single structure incorporating residential, commercial, and public spaces. Today, the building serves as a museum of modern art, design, and architecture, housing a hotel and restaurant as well as gallery spaces. The installation for this exhibition was designed by celebrated architect Zaha Hadid. At the Yale School of Architecture. Call 203/432-2288 or visit www.architecture.yale.edu

Frank Gehry: Art + Architecture
Ontario, Canada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Dates & Events

February 18–May 7, 2006
Best known for building curvaceous structures often covered with titanium, Canadian-born Gehry has completed the design phase of the Art Gallery of Ontario (AGO) expansion, his first project in Canada. The exhibition features drawings, models, and site photographs of four of Gehry's projects from the past decade. Along with working models generated through the design of the AGO's expansion project, the show will explore the impact of Gehry's buildings on the surrounding communities. At the Art Gallery of Ontario. Call 416/979-6656 or visit www.ago.net.

Golconde: The Introduction of Modernism in India
Chicago
February 21–April 6, 2006
Sited on the coastal edge of the Bay of Bengal, Golconde, a dormitory for the Sri Aurobindo Ashram in Pondicherry, India, was designed by architects George Nakashima and Antonin Raymond. Completed in 1942, Golconde was the first reinforced, cast-in-place concrete building in India and clearly celebrates the Modernist credo: architecture as the manifest union of aesthetics, technology, and social reform. The exhibition assembles construction drawings, architects' letters and journals, and extensive photographs of this extraordinary building. At the Graham Foundation. Call 312/787 4071 or visit www.grahamfoundation.org.

Extreme Porosity
Los Angeles
February 27–March 24, 2006
This exhibition features photographs, drawings, and models designed and fabricated at UCLA by architecture and urban design students who participated in a traveling seminar led by faculty member David Erdman. The studio went to Istanbul, examining mosques that reflect 15th- and 16th-century innovations in the use of minimal surfaces where extreme lightness, porosity, and geometry are evidenced. At UCLA Department of Architecture and Urban Design Perloff Gallery. Call 310/825-2585 or visit www.aud.ucla.edu.

Ongoing Exhibitions

Santiago Calatrava: Sculpture into Architecture
New York City
Through March 5, 2006
Many forms of Calatrava's celebrated buildings originated in his independent works of art. This exhibition showcases his sculptures in marble and bronze, as well as drawings, and architectural models, including work related to the new transportation hub he has designed for the World Trade Center site. This is the first exhibition in the U.S. to feature such a large selection of Calatrava's independent work and to examine it in conjunction with his architecture. At the Metropolitan Museum of Art. Call 212/535-7710 or visit www.metmuseum.org.

The Fashion of Architecture: Constructing the Architecture of Fashion
New York City
Through March 11, 2006
In this exhibition, visitors are encouraged to investigate the contemporary relationship between fashion and architecture. Studies in the congruencies between these two dynamic disciplines will provide a framework for understanding current trends in visual culture. *The Fashion of Architecture* coincides with Fashion Week and showcases projects by Yeohlee Teng, Hussein Chalayan, Shigeru Ban, and Zaha Hadid. At the Center for Architecture. Call 212-683-0023 or visit www.aiany.org for more information.

The HOME House Project: The Future of Affordable Housing
Atlanta
Through March 28, 2006
A multiyear traveling initiative created by the Southeastern Center for Contemporary Art (SECCA) in Winston-Salem, North Carolina. The first component of the project was a national design competition and exhibition that showcased innovative solutions for sustainable low-to-moderate-income family housing proposed by more than 440 contest entrants

n around the world. At the Museum of
ign Atlanta. Call 404/688-2467 or visit
v.museumofdesign.org for more information.

cago Architecture Foundation Tours
cago
ough March 2006
by trained volunteer docents, these
laimed tours explore the architecture of the
agoland area via bus, boat, train, by walking,
egway. For descriptions of all tours, visit
v.architecture.org/tours.

nmetry
Angeles
ough May 7, 2006
ne world of space and time, symmetry
ves its meaning from a center, a repetition of
ns on mirroring sides of an axis. This exhibi-
features works by Los Angeles–based
temporary artists that use or relate to this
cept. At the MAK Center for Art &
hitecture L.A., at the Schindler House. Call
/651-1510 or visit www.makcenter.org.

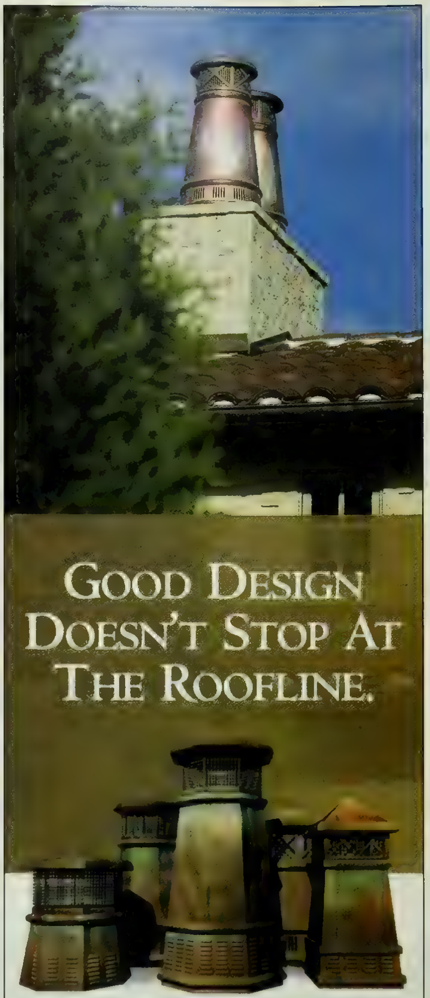
ctures, Conferences, and mposia

e School of Architecture
ring Lecture Series
w Haven
ruary 6–20, 2006
February 6, U.K. architect Tony Fretton will
the Paul Rudolph Lecture, "Buildings and
ir Territories." On February 9, The Brendan
Lecture will be given by Wendy Steiner.
talk is titled "What Is Aesthetic
nservatism?" On February 13, Amanda
den, head of the New York City Planning
mmission, will give the annual Eero
arinen Lecture, entitled "Shaping the City:
trategic Blueprint for New York's Future."
February 20, Norway-based architect Craig
kers will talk about the unique work
hic and vision of his firm, Snøhetta. At Yale
ool of Architecture Art and Architecture
ilding. Call 203/432-2288, or visit
w.architecture.yale.edu

Lecture: Greening the Built Environment in Response to Climate Change
Washington, D.C.
February 9, 2006
The National Building Museum and the Koshland Science Museum (KSM) present a discussion by Tim Beatley, Teresa Heinz Professor of Sustainable Communities, University of Virginia (UVA), and Bruce Hayden, professor and chair, department of environmental sciences at UVA, about green design concepts for homes and communities. They will examine the relationship of architecture and climate change, and specific design features that can diminish the potential impact of climate on the urban environment. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Symposium: On-Site: New Architecture in Spain
New York City
February 10–11, 2006
The Museum of Modern Art and Columbia University's Graduate School of Architecture, Planning and Preservation (GSAPP), cosponsor a two-day symposium to accompany the exhibition. Speakers include Terence Riley, the Philip Johnson chief curator of architecture and design, MoMA; Mark Wigley, dean of studies, GSAPP; ARCHITECTURAL RECORD contributing editor David Cohn, and architects represented in the exhibition. At Columbia University. For more information about the symposium, visit www.moma.org/thinkmodern. For information about reservations, visit www.arch.columbia.edu

D.C. Builds: Extending Modernism in the Monumental City
Washington, D.C.
February 13, 2006
Usually demonized as a failed 1960s urban renewal effort, Washington's Southwest neighborhood has an unappreciated fabric of Modernist residential architecture. Last fall, the Anacostia Waterfront Corporation (AWC) sponsored a design studio at the Harvard Graduate School of Design to investigate the extension and redefinition of this architectural legacy in



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rebuilding the Southwest Waterfront. Inspired by this studio work, a panel of leading architects will discuss the role of Modernism in a city largely characterized by monumental Classicism and historic patterns of urbanism. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

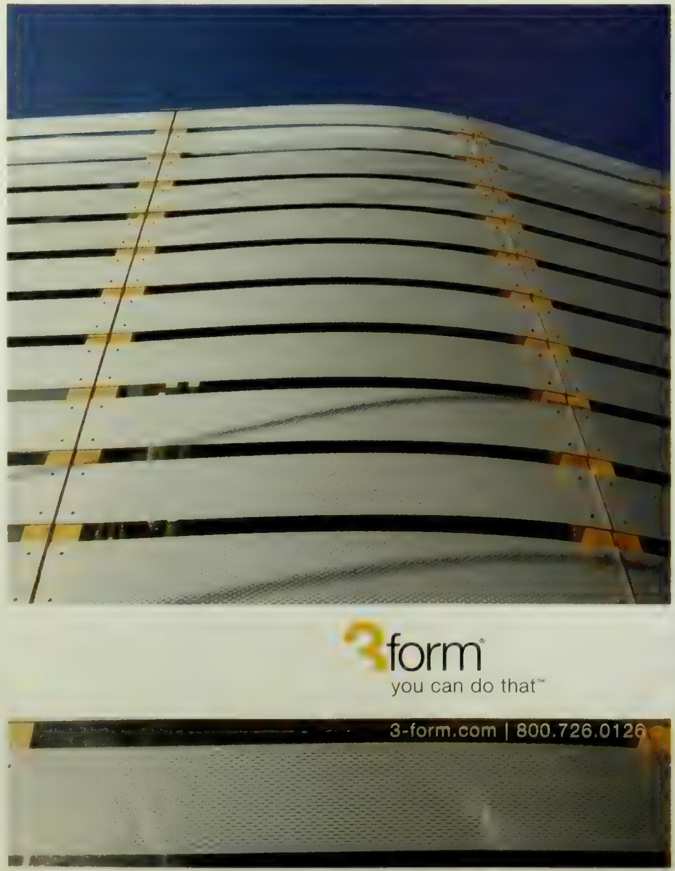
Lecture: Engineering Large-Scale Structures
Washington, D.C.
February 14, 2006
For three decades, Thornton-Tomasetti Group has devised creative engineering solutions for some of the world's iconic structures, from skyscrapers and stadiums to museums and airports. Charles H. Thornton, Thornton-Tomasetti founding principal, former cochairman, and now consultant, and Richard L. Tomasetti, Hon. AIA, chairman and founding principal, will explore the technical demands involved in creating large, complex buildings, including Petronas Towers, in Malaysia; Taipei 101 (currently the world's tallest building), in Taiwan; Soldier Field, in Chicago; and the Modern Art Museum of Fort Worth. At the National Building. Call 202/272-2448 or visit www.nbm.org.

Philip Johnson: Portraits
New York City
February 16, 2006
Terence Riley, the Philip Johnson chief curator of architecture and design, MoMA, and Jeffrey Kipnis, professor of architecture, Knowlton School of Architecture, Ohio State University will give individual presentations in honor of the architect and curator, followed by a screening of Merrill Brockway's 1965 film *This Is Philip Johnson* and a discussion. At the Museum of Modern Art. Call 212/708-9400 or visit www.moma.org

Philip Johnson and the Constancy of Change
New Haven
February 17–18, 2006
The Museum of Modern Art and the School of Architecture at Yale University cosponsor a symposium on the architect Philip Johnson (1906–2005). Architects and scholars analyze Johnson's work as an architect, teacher, and curator. At Yale University. This symposium is free, but reservations must be made by February 6. Call 203/432-2889.

Fundamentals of Commercial and Industrial Lighting
Cleveland
February 22–24, 2006
April 19–21, 2006
June 28–30, 2006
Designed for newcomers to the lighting industry, this conference provides basic product and applic tion training for commercial and industrial lighting. This program contains lectures and full-scale lighting demonstrations that crea an interesting, fast-paced, compr hensive lighting conference. Topic include: lighting terminology; light ing measurements and color; an overview of major light-source fa ilies and systems; and application modules for retail, office, industri and outdoor lighting. At the Lighting Institute. For more information, call 800/255-1200 or vis www.gelighting.com.

The Making of Modern New York: Puerto Rican Architec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symposium features architects of rto Rican heritage who practice lew York City. At Hunter College n auditorium. Call 212/772-5695 isit www.centropr.org.

mposium: The Gulf Coast: storing Wetlands and nt Life
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ruary 23, 2006
ricanes Katrina and Rita not y destroyed countless buildings ng the Gulf Coast, but also killed nt life and devastated the already npromised coastal wetlands. The s of these natural elements is ibly tragic, because if still intact, they could mitigate damage from future storms. A panel of landscape architects and planners will examine the role of these critical components in a healthy ecosystem and discuss the vital need for restoration of the wetlands and other issues. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Building Energy Conference and Trade Show
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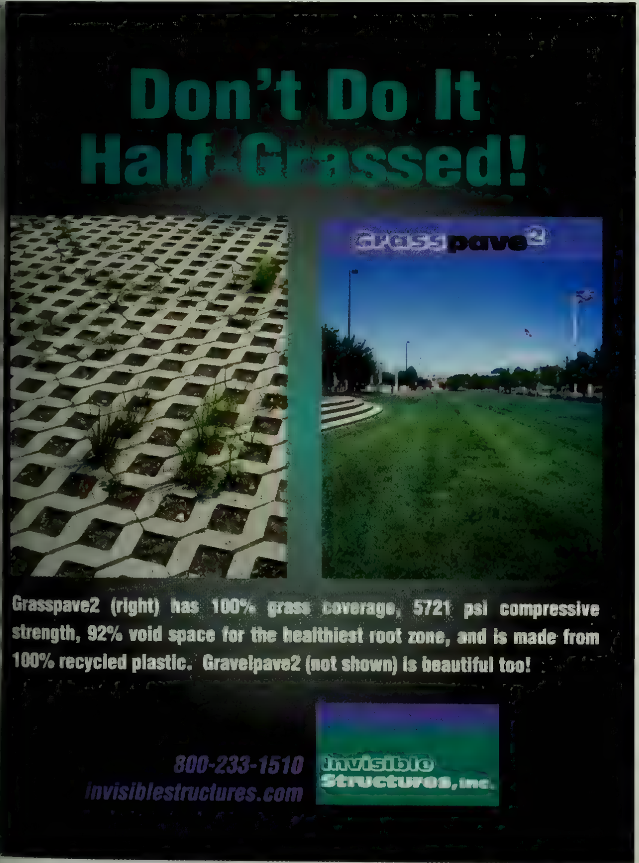
Competitions

2006 Burnham Prize Design Competition
Preregistration Deadline: February 10, 2006
The Burnham Prize is an international biennial design competition sponsored by the Chicago Architectural Club, open to young architects and architectural graduates, to make an extended visit to the American Academy in Rome. This year, the Burnham Prize is seeking ideas regarding the neighborhood of North Lawndale, a landmark neighborhood close to downtown Chicago that has experienced economic hardship and urban blight over the past 30 years. Call 773/848-7368 or visit www.chicagoarchitectureclub.org.

BSA's 2006 Research Grants in Architecture Program
Application Deadline: February 10, 2006
Boston Society of Architects (BSA) is offering $75,000 in research grants to U.S. building industry professionals. Individuals and teams (architects, academics, designers, product developers, students, etc.) in the national design and construction industry seeking support for an original research project are encouraged to submit applications. With a focus on design as research, this program encourages inquiry not only into specific research topics but also into how design itself constitutes



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research. Call 617-951-1433, x 227, or visit www.architects.org.

2006 AIA San Francisco Design Awards Program

Deadline: February 13, 2006

Award categories are Excellence in Architecture, Excellence in Interior Architecture, Energy and Sustainability, Unbuilt Design, Urban Design, and Special Achievement. Call 415/362-7397 or visit www.aiasf.org.

In Pursuit of Housing

Registration Deadline: February 17, 2006

The Boston Society of Architects (BSA) is administrating a design competition that encourages students and recent graduates to address the complex issues involved in designing housing for young people with limited resources. Visit www.architects.org.

4 Corners Design Competition

Registration Deadline: February 24, 2006

Submission Deadline: March 1, 2006

Submit a design for a pedestrian connectivity in downtown Naples, Florida. In addition to the jury's judging process, community members will vote for the "People's Choice Award." More information is available at www.aiaflasw.org.

Inside:Out—Weaving Arts into the Urban Fabric

Registration Deadline: February 27, 2006

The Boston Center for the Arts is sponsoring a two-stage, national open design competition for its public open spaces in Boston's South End neighborhood. Set at the crossroads of widely divergent socia groups and communities, the Boston Center for the Arts' campus includes theaters, art galleries, artist studios, the Boston Ballet, restaurants, residences, and the iconic Cyclorama. The competition seeks innovative ways to spatialize the BCA's mission by bringing the inside out and by weaving arts into the urban and social fabric of this Boston neighborhood. Visit www.architects.org.

New Life for the Big Easy New Orleans

Deadline: March 1, 2006

An international competition for new housing in New Orleans in the wake of Hurricane Katrina's devastation to the Crescent City. Participants in the competition will design housing for an actual block in the city. Programmatic elements include single-family housing, multifamily housing, and mixed-use urban planning. Visit www.architecturalrecord.com.

Eco: Dwell House for an Ecologist—A Design Ideas Competition

Registration Deadline: March 1, 2006

The AIA challenges architects and students everywhere to propose a unique dwelling that combines integrity and inspiration. The progran is a live/work dwelling for an ecologis in residence at the U.S. Fish and Wildlife Service (FWS). The site is th grounds of the National Conservatio Training Center in Shepherdstown, West Virginia. Visit www.aia.org/cod.

AIA St. Louis Annual Architectural Photography Competition

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Dates & Events

Deadline: March 15, 2006
Entries must be submitted in slide format and may be in either color or black-and-white format. Actively registered architects in the U.S., members of AIA or AIAS are eligible to enter. The top 14 images will be on display at the AIA National Convention in Los Angeles. For information, call 314/621-3484 or visit www.aia-stlouis.org.

10th Biennial Bridge Awards Competition
Deadline: March 31, 2006
Portland Cement Association (PCA) is seeking nominations for its 10th biennial Bridge Awards Competition. All types of bridges in which the basic structural system is concrete—highway, railway, pedestrian—are eligible. Call 847/972-9100 or visit www.cement.org.

Edge as Center: Envisioning the Post-Industrial Landscape
Registration Deadline: March 31, 2006
The Boston Society of Architects (BSA) announced recently that the city of Somerville, Massachusetts, will join with the BSA to hold an international urban design ideas competition for the industrial Brickbottom area in East Somerville. A competition prize fund of $35,000 will be awarded to the top three entrants. For details, visit www.architects.org/somerville.

Urban-Open
Deadline: April 15, 2006
A two-phase, open competition with the objective of honoring Chicago's commitment to sustainability and community development. The first phase solicits design schemes for an outdoor community space. Visit www.urban-space.org.

2006 Benjamin Moore HUE Awards
Submissions Due: May 19, 2006
Presented by the Benjamin Moore company to honor architects and interior designers for exemplary use of color in both residential and contract projects, the awards recognize design professionals who incorporate color in innovative and imaginative ways—through the use of interior and exterior paints, building materials, textiles and other surfaces, plus design elements and furnishings. Call 212/966-3759, x 233 or visit www.benjaminmoore.com.

Dream House with HGTV
Deadline: June 2006
High Noon Productions announce the continued production of the HGTV series, *Dream House*, and seeks architects who are interested in appearing on the show. T be eligible, you must have broken ground by the first half of 2006 and be willing to have camera crews follow your home's constru tion from start to finish. Intereste families, contractors, or architects may call 303/712-3184 or visit www.highnoonentertainment.com

E-mail event and competition information two months before event or submission deadline to elisabeth_broome@mcgraw-hill.com.

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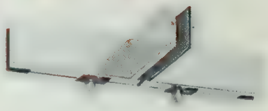

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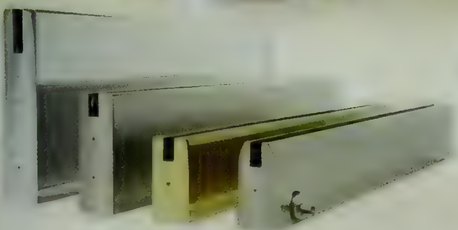

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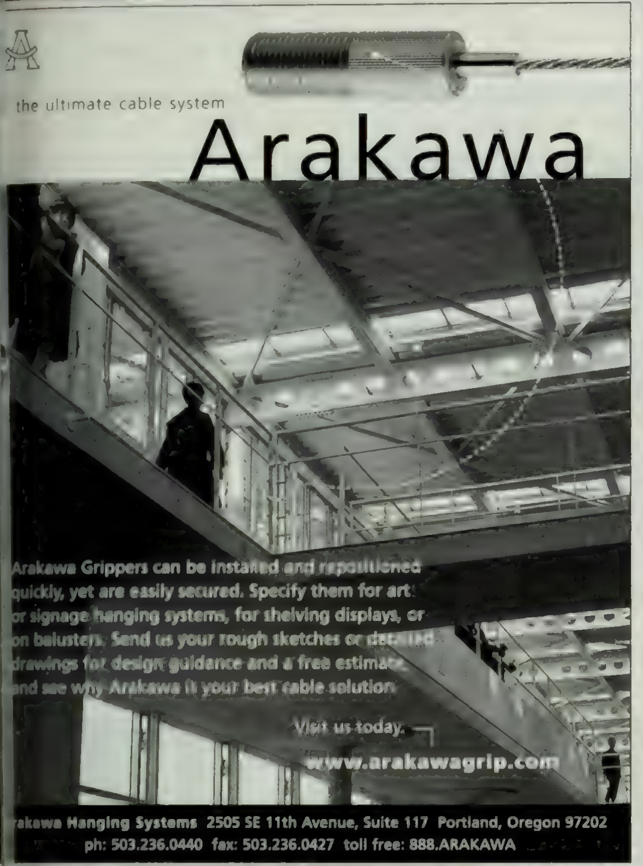

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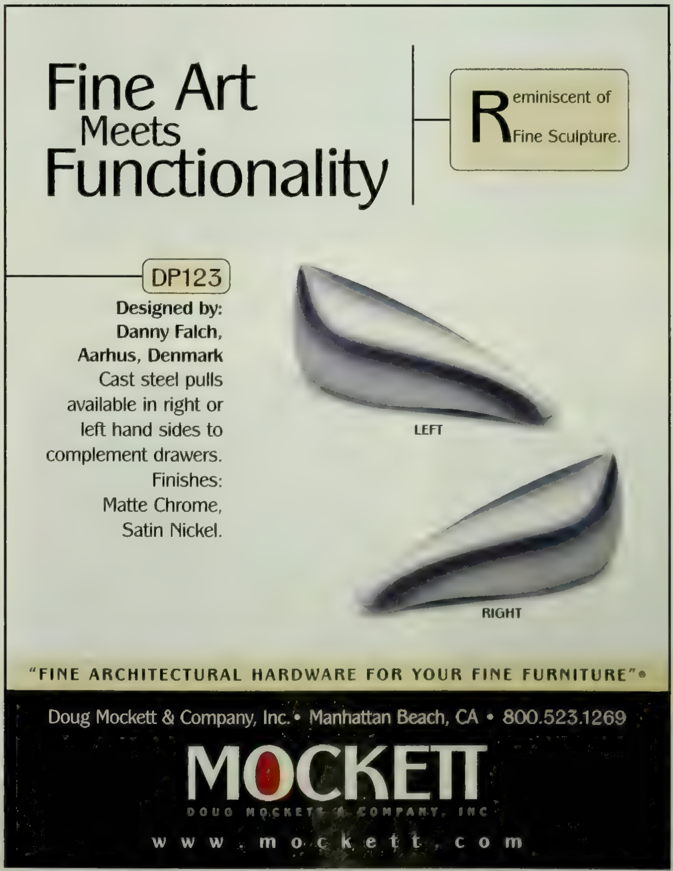

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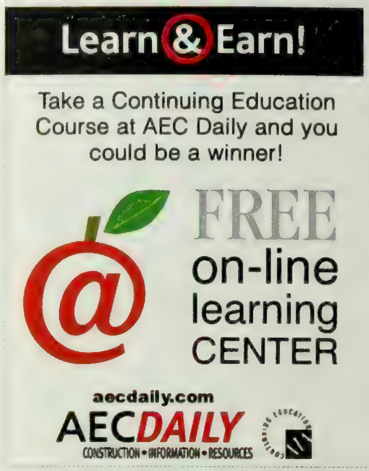
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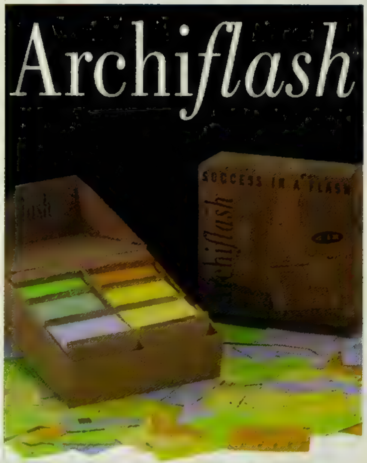

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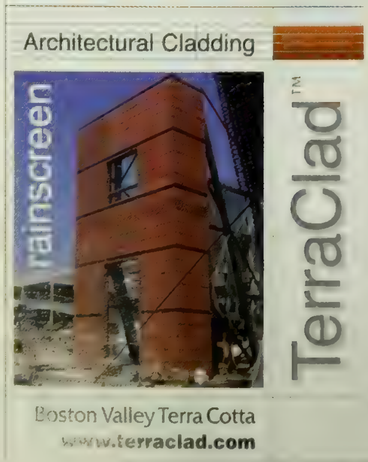

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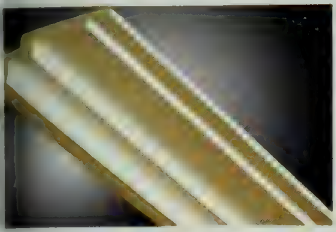

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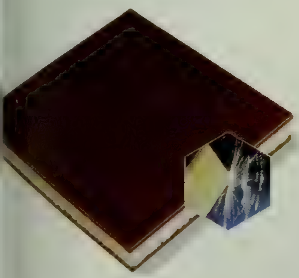

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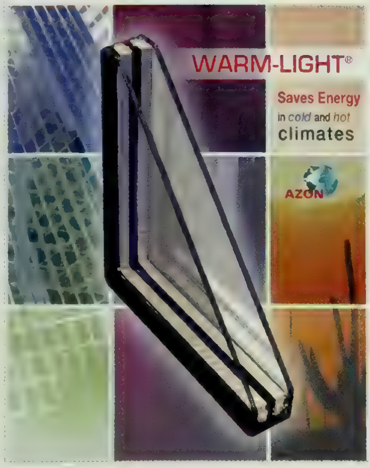

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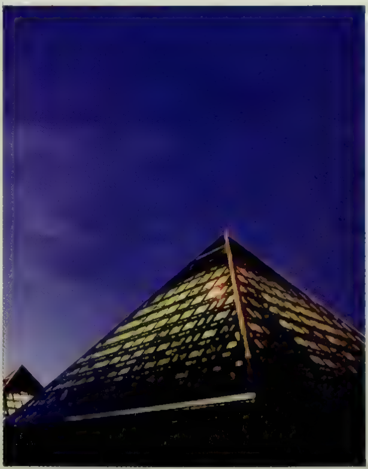

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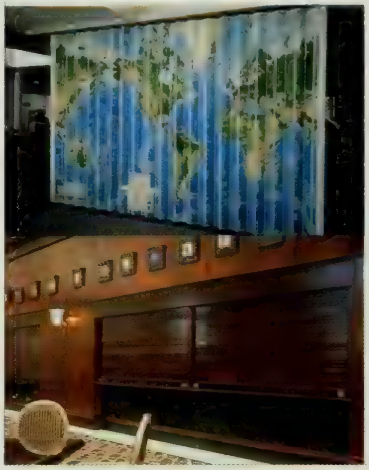

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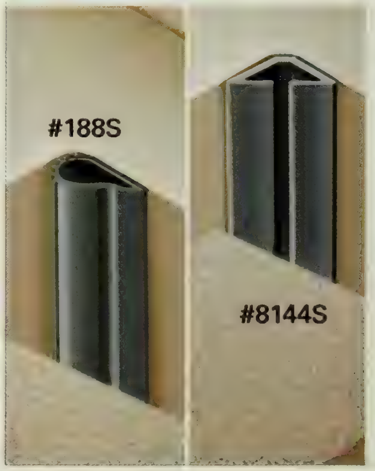

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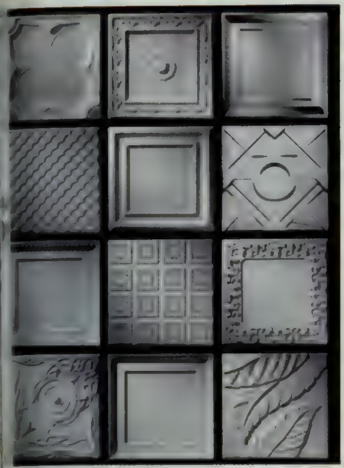

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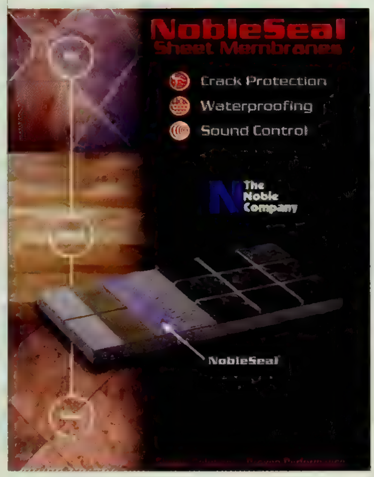
The Noble Company



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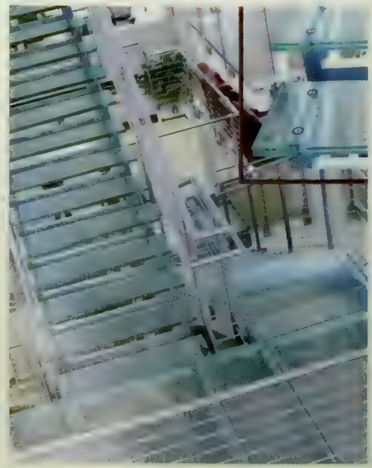

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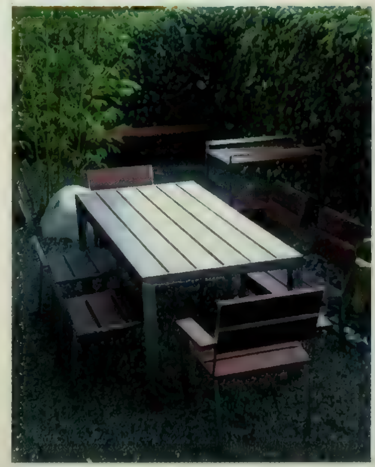

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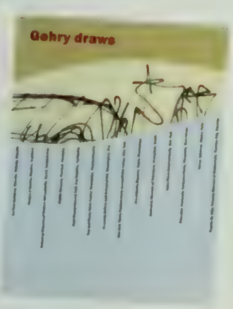

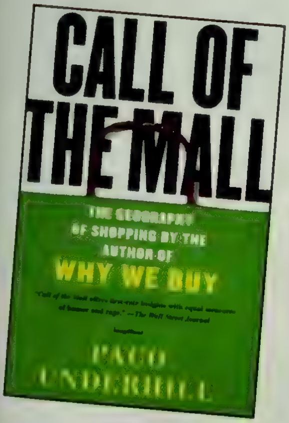

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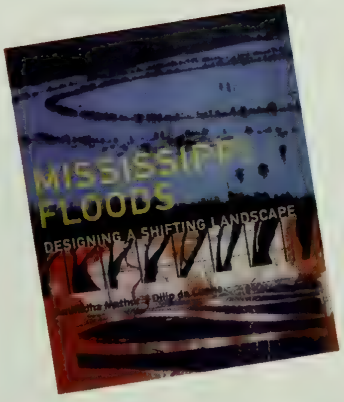
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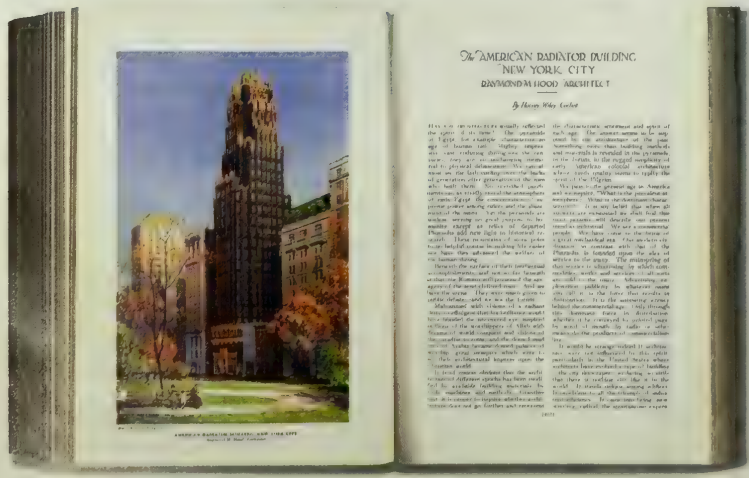
From corporate ad to chic caravansary

Raymond Hood's American Radiator building, in New York City, published in ARCHITECTURAL RECORD in May 1924 (below), was converted in 2001 to the Bryant Park Hotel (above two).



The AMERICAN RADIATOR BUILDING
NEW YORK CITY
RAYMOND M HOOD ARCHITECT

By Harvey Wiley Corbett

In 1924, Raymond Hood, famed for the Chicago Tribune Tower (1922), shocked the New York archite
tural community by designing a skyscraper that was already black—without benefit of decades of
soot. Working with Andre Fouilhoux, Hood faced the 26-story American Radiator Building in black bri
fired in manganese, and trimmed it with gilded terra-cotta to enliven the crenellated top. As Harvey Wi
Corbett, an architect who would soon join Hood on the team designi
Rockefeller Center, wrote in RECORD that May, "As an advertisemen
consider the building a magnificent success." Years went by, and th
tower, renamed the American Standard Building, was designated a N
York City landmark in 1974. Then in 2001, it was renovated by Davi
Chipperfield Architects for the Bryant Park Hotel. Conceived by dev
oper Philip Pilevsky as a boutique hotel with 129 rooms, the structur
ideally suited for the fashion crowd: Not only is the garment cente
close at hand, but the hotel faces Bryant Park, the site of Fashion
Week's twice-a-year tent shows. In addition to restoring the exterior
designing the pared-down Modern guest rooms, the London-base
Chipperfield office converted the former product showrooms on th
main floor into a restaurant (above left) and a red-paneled recepti
area, with bar and screening room downstairs. A showroom, added
Fouilhoux in 1937, has been spiffed up for the Katharine Gibbs Sch
(above right, bottom center of photo). Now the black shaft fits right
with the attire of the crowd it accommodates. *Suzanne Stephens*

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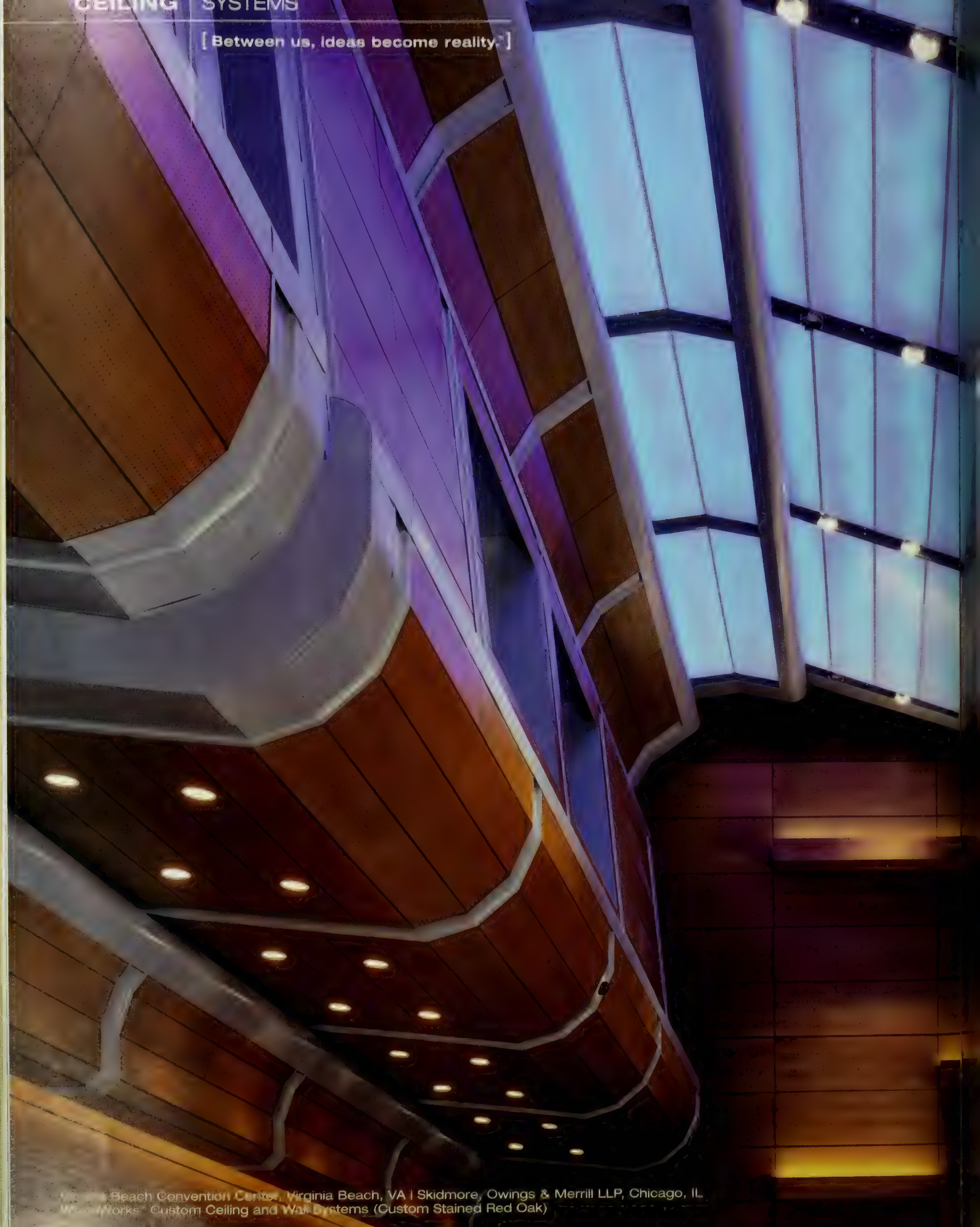

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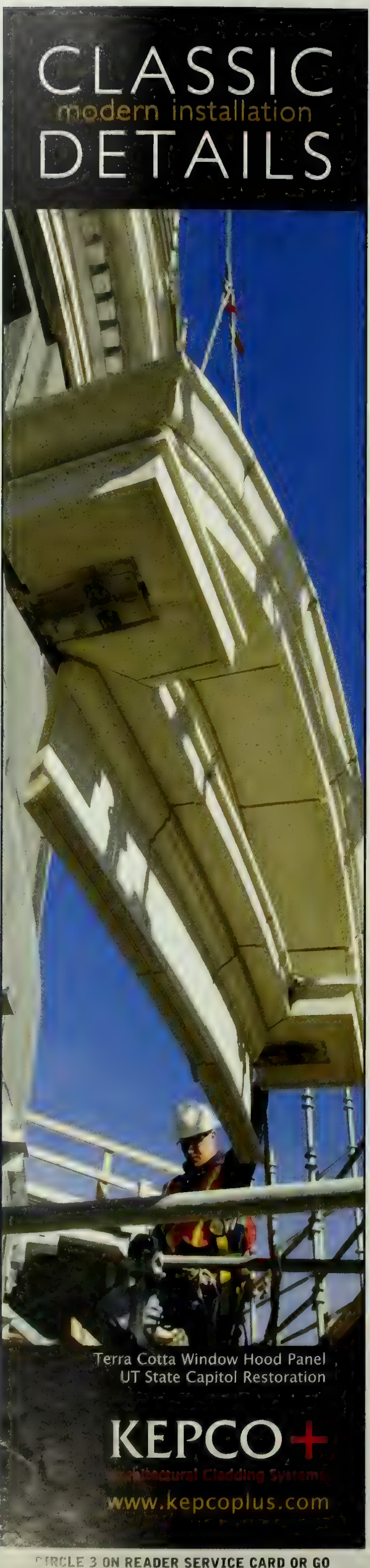
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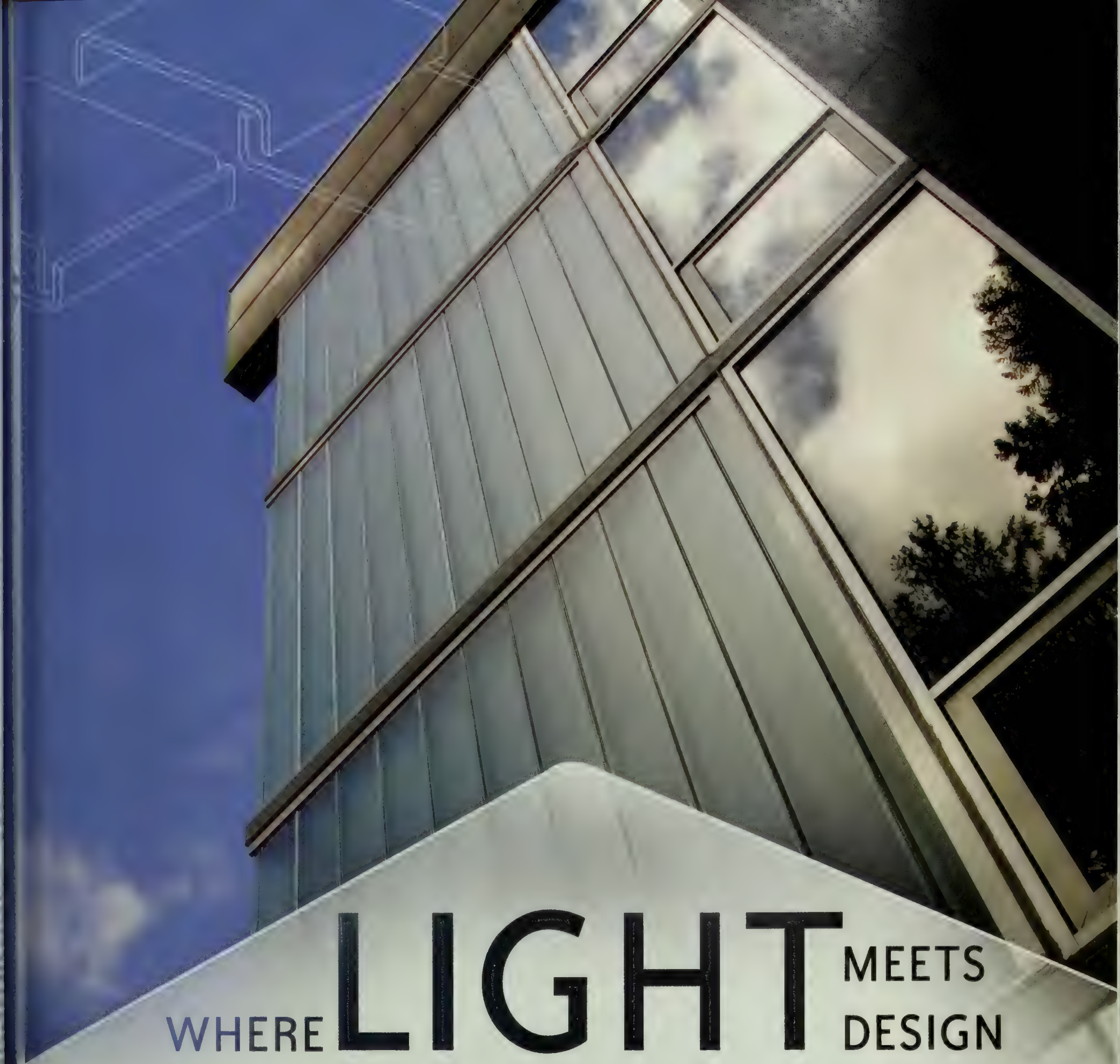

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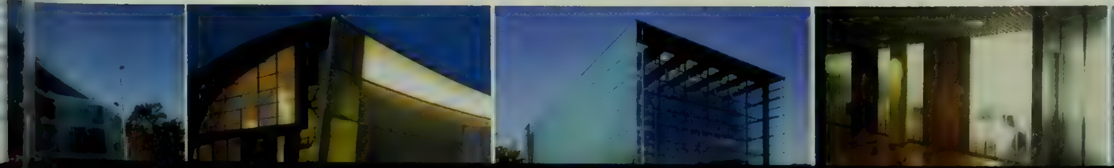

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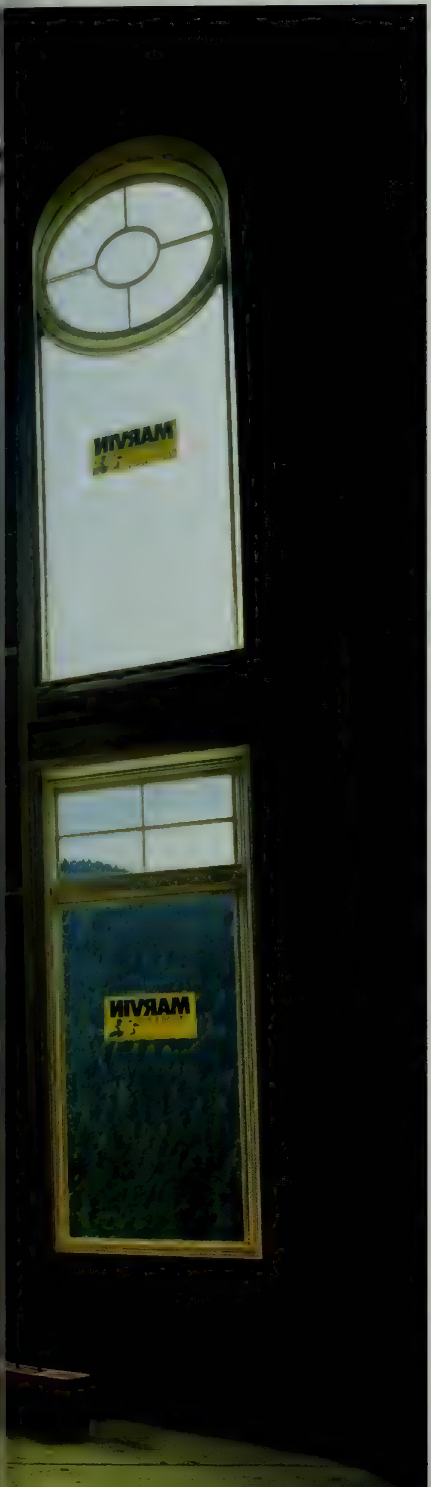

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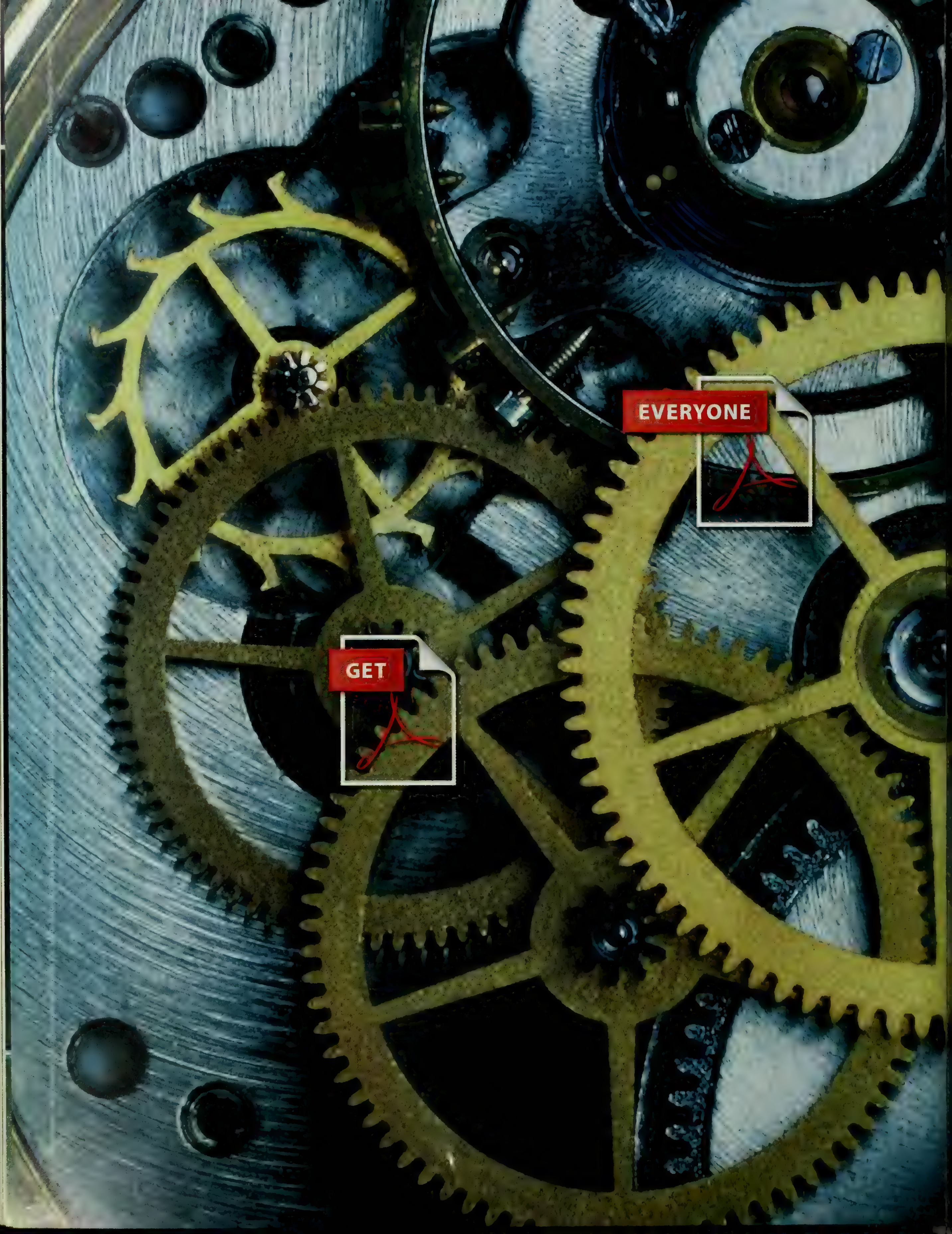
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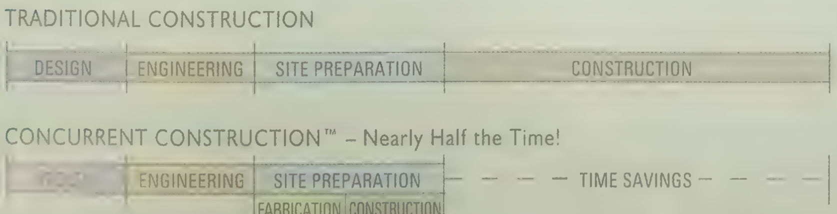

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03.2006

On the Cover: Svalbard Research Centre, by Jarmund/Vigsnæs Architects. Photograph by Nils Petter Dahle
Right: Magma Arts and Congress Center, by Artengo Menis Pastrana. Photograph by Roland Halbe

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This month in Continuing Education

March 2006

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Exploring the High Performance Benefits of Laminated Glass

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LEARNING OBJECTIVES:

- Understand how laminated glass addresses design and safety challenges.
- Recognize the benefits of laminated glass during hurricanes and earthquakes.
- Explain why laminated glass offers a high degree of security protection.
- Discuss how laminated glass reduces sound transmission.
- Identify the sustainable, energy-efficient performance qualities of laminated glass.

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The Essential Design Element for Any Office Space

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LEARNING OBJECTIVES:

- Examine how office design has transitioned to accommodate changing organizational needs.
- Incorporate lighting control strategies that improve building efficiency and add value to the office space.
- Specify lighting controls that are easy to install, maintain, and reconfigure when floor plans change.

This month at archrecord.construction.com

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Project Portfolio

Beyond the 50 states, beyond London, Shanghai, or Milan, rooted in landscape or topography or local culture, stand architectural projects that could often have occurred in no other place. *Architectural Record* went Way Out There to find such projects, and we suggest that the work in these unexpected places can inspire our own architectural efforts.

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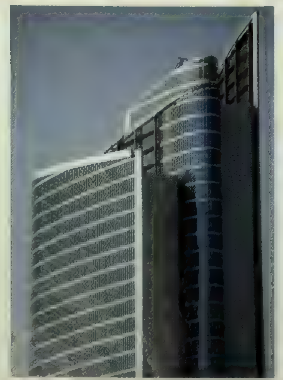

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Building Types Study

American architects tweak old norms to create amenable offices in low-rise buildings and skyscrapers.

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House of The Month

In the green hills of Rohrdorf, between Munich and Salzburg in Germany's Upper Bavaria, an architect builds himself a home of sinuous wood and glass.

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Interiors

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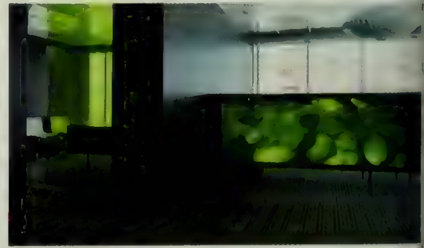

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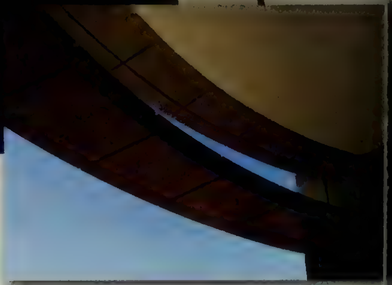

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Keep the Pressure On

Editorial

By Robert Ivy, FAIA

We cannot design ourselves out of Katrina. No matter how well intentioned we architects may be, no matter how many plans and volunteer hours we commit, the scale and complexity of is disaster exceeds the grasp of design alone, despite the fact that many of us re trying hard.

Currently, the front line rests with government action. Think about e immense implications of the storm, the largest natural disaster ever to rike the United States. The Red Cross now estimates that over 275,000 omes were destroyed, as many as 200,000 in Louisiana alone. The storm cut swath across three states, affecting each differently. In Mississippi, the entire astline lies wounded, with whole communities ground into powder. Greater ew Orleans stews in political, economic, and social gumbo, its people forming diaspora scattered throughout the 50 states. Nothing alters the fact that EMA maps due out in April will demonstrate that scores of houses and plots land remain in harm's way. Until the U.S. Corps of Engineers stabilizes the vee systems that have historically ringed the city, vast tracts are subject to rther flooding, and hurricane season is galloping toward us again.

Local citizens have been outraged at our lack of a national sponse. Put yourself in the residents' place for a moment. If you, a New rleans citizen, found your house irreparably damaged, and you faced a onthly mortgage, what would you do? Shouldn't the federal government fer relief? The Baker Bill, sponsored by U.S. Representative Richard Baker om Louisiana, proposes establishing the Louisiana Recovery Corporation— agency to purchase back damaged property from residents. While the bill, admirable proposal, has found advocates in Congress, and support from e AIA, the Bush administration is withholding its favor; congressional publicans seem to be pulling back their support as well, relying on the rces of free-market capitalism. The administration has, instead, already rmarked $19.8 billion in supplemental appropriations for agencies like e Department of Homeland Security, FEMA, and for federal structures uch as VA hospitals), with $4.2 billion for the Community Development ock Grant program for Louisiana. Money for federal agencies come out of ese requests.

The temptation might be to accept the latest federal appropriations as the much-sought relief. It sounds like a lot of money and will help with housing and local infrastructure, but unfortunately, the total pales in comparison to Katrina's toll. According to credible sources, the actual cost soars to $30 billion when you outline the real needs. Among the requirements are levee and flood protection, coastal wetlands mitigation, the local match for hazard mitigation, the costs to colleges and universities (some of which were decimated), local public services (police and fire protection, for example), electric utilities, and other infrastructure work that is not fully determined.

While the dispensation of federal appropriations seems to be changing with each day's posting on the Web, this much is clear: Our largest natural disaster deserves a heroic response from all our citizens. New Orleans alone, the fulcrum, remains vital to our commerce and to our national soul. That city takes its place among the great cities, not only of this country, but uniquely on the world stage. The Mississippi Gulf Coast, struck with commensurate disaster, deserves equal, full attention.

Our immediate response as architects always seems to be design. In this case, we should be acting to provoke leadership and keeping the pressure on our elected officials. We need vision, direction, and commitment at all levels as never before. While an ever-present war continues to demand our sons and daughters, our national treasury, and our emotional energies, it is time that the allied communities of design professionals rise up, speak out for the cities we have helped to design and build in this country, and find the political will to revitalize an indisputable lodestone of American culture—the Gulf South. Design will come later.

Robert Ivy

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Letters

ULI responds

I worked with the 50-plus members of the Urban Land Institute, who provided a rebuilding framework to the Bring New Orleans Back Commission in November 2005. Michael Sorkin wrote in his February Critique ["Will new plans for the Gulf drown it again, this time in nostalgia?," page 47] that the ULI recommended "abandoning" some parts of the city as too expensive to save and that its recommendations were predicated on a bottom-line mentality. He also mplied that there was an implicit motivation to negatively affect the ow-income African-American popuation of New Orleans. I'd like to set he record straight.

ULI's strategy for rebuilding New Orleans was premised on our firm belief that every citizen has the right to return to neighborhoods that are safe and sustainable. We recommended that the city supplement engineered flood control with natural barriers. This will entail reinforcing the levees, drainage canals, and pumping stations by restoring more natural areas to protect the city's residents, and rebuilding in a way that better respects the topography of the city.

In addition, many of the severely flooded areas will require environmental and engineering evaluation before rebuilding can begin. We recommended that these evaluations begin immediately so that neighborhood rebuilding can start. It is unfortunate that the historical growth patterns led much of the African-American population into low-lying areas of the city. But, safety, not race, was the key to the ULI recommendations.

What we recommended for those who cannot rebuild in place is fair-market compensation—at pre-Katrina value—for their homes and businesses, to enable them to relocate and rebuild in a safer part of their community. ULI never suggested or implied that entire neighborhoods be abandoned. There are substantial portions of each neighborhood that can be rebuilt in a way that adds to the entire city's revival.

—Rachelle Levitt
Executive Vice President
Urban Land Institute
Washington, D.C.

WaterColor lesson

Michael Sorkin's February Critique on the Congress for the New Urbanism's [CNU] recommendations for the reconstruction of the Gulf coast came at a great time, for me at least, in that I read it on vacation, shortly after my first visits to the "New Urbanist" Florida communities of WaterColor and its older, more famous neighbor, Seaside. While I haven't read the CNU report, I did understand Mr. Sorkin's criticisms of its overemphasis on architectural formulas aimed at strengthening a more homogeneous and identifiably "regionalist" look in the new construction.

The buildings in WaterColor all seemed to me to be beautiful distillations of how I had envisioned coastal-region architecture. They were consistently well designed, clean, full of wonderful details and color, and set into a path-intensive, varied landscape. The houses were generally modest in scale and de-

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emphasized the automobile. The more I thought about it, however, the more I wondered if WaterColor is only an "ideal"—no more than a theme park of sorts? Does it only represent a particular version of one narrow aspect of local design?

It is a valid thing to seek and understand regional themes in design and to keep local flavor alive, and it is equally valid to promote walkable, well-organized communities. It is most important, however, to have an overriding design framework that can accommodate and thrive on diversity. This diversity is what seemed to be lacking in WaterColor, and is what Mr. Sorkin warned against in the future redevelopment of Gulf coast communities. Thank you for the reminder!
—Scott J. Newland, AIA
Minneapolis

Antidote for doom
I just read Robert Ivy's January editorial, "Reconstructing Kuwait" [page 19]. With all the doom and rubble we see in Baghdad, it was inspiring to hear about a city nearby that is recreating itself. It must have been quite a sight.
—Hansa Bergwall
New York City

Speaking in tongues
Robert Campbell's January Critique [page 57] brilliantly identifies the major fault line in current design—namely, our failure to create memorable architecture possessing common appeal. Similar fault lines exist in much contemporary art and music where self-expression has achieved supremacy over craftsmanship and common sense. Our inability to communicate with the larger public is exemplified by the arcane architectural babble so current in the profession today. If we concerned ourselves more with building well, not with current fashion or specious theories, we may, finally, discover a universal audience.
—James A. Gresham, FAIA
Tucson, Ariz.

Campuses of the future
Robert Campbell [January, page 57] might be accurate about the nature of the arguments on both sides of the UVA campus architecture discussion. However, he may have missed a critical point with respect to the setting and the implication of campus architectural design guidelines. With strict subscription to a uniform architectural style, the campus environment is perpetuating the concept of conformity to the students and faculties, depriving them of the most important privileges of university life: the freedom of thinking and discourse, and the courage of exploration and expression.

For years, conformity was the principle of campus architecture, as it was the principle of learning. With the rapid pace of change in modern society, it is critical that the campus reflect the real world, as the place where knowledge and experience are transferred not just from an institution to the students. There is a total new way of learning. Our younger generation is continuously teaching us with their actions.

Take a look at the great cities i the world. With diversity and heterogeneous architecture, they are the campuses of the future generations.
—Henry Chao, AIA
Columbus, Ohio

Corrections
In the February issue, the distributor of the Shades and Screens textile collection [page 182] was omitted. The line is now distributed nationwid through Nysan for Hunter Douglas Shading Systems' network. In addition, three of the fabrics included in the image that ran are, in fact, Nysan's Greenscreen products. Two images in February's multifamily housing Building Types Study [page 120] should have been credited to Jim Wasserman.

Send letters to rivy@mcgraw-hill.co

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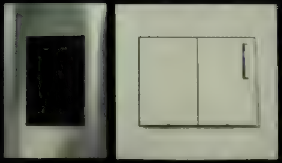

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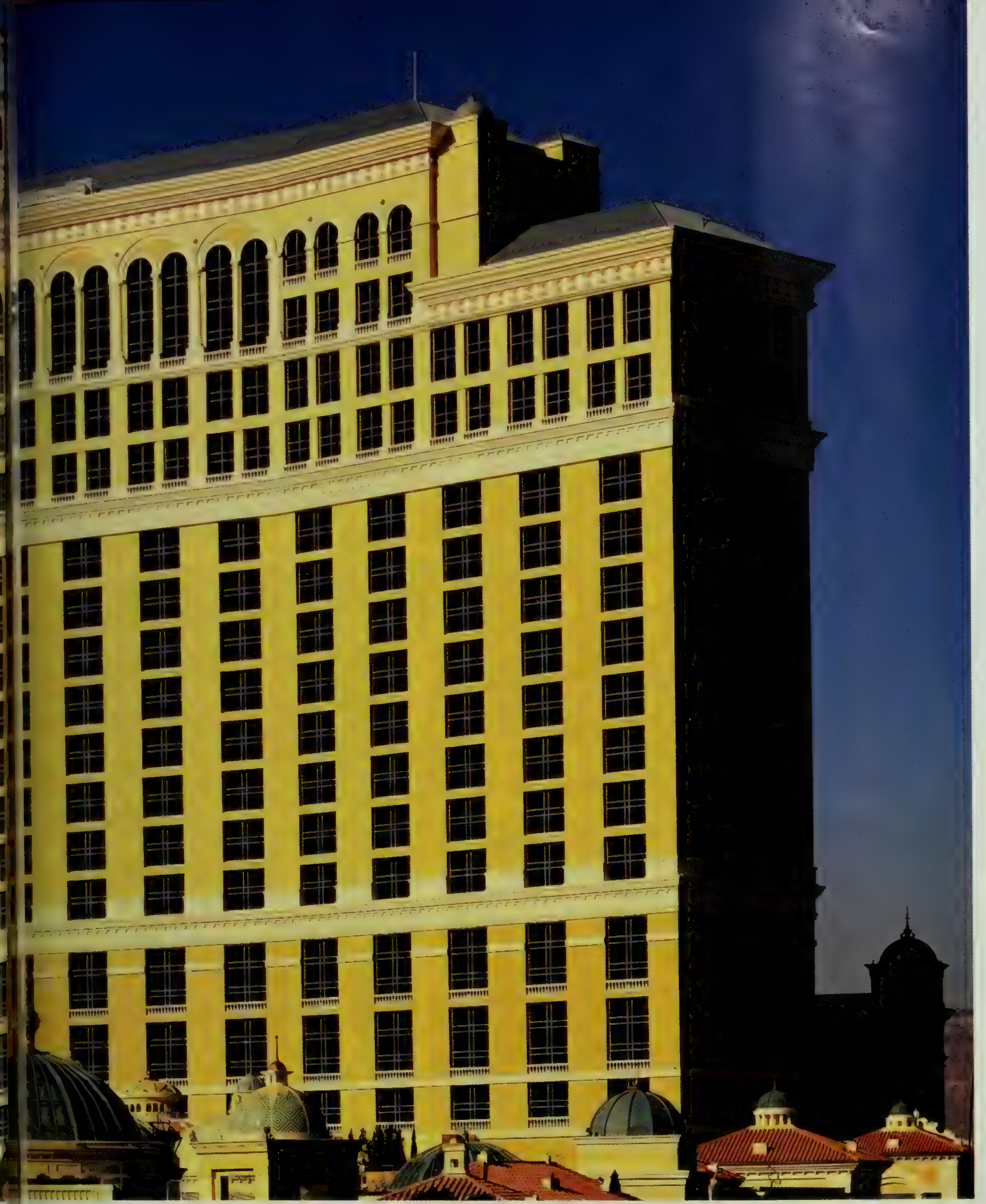

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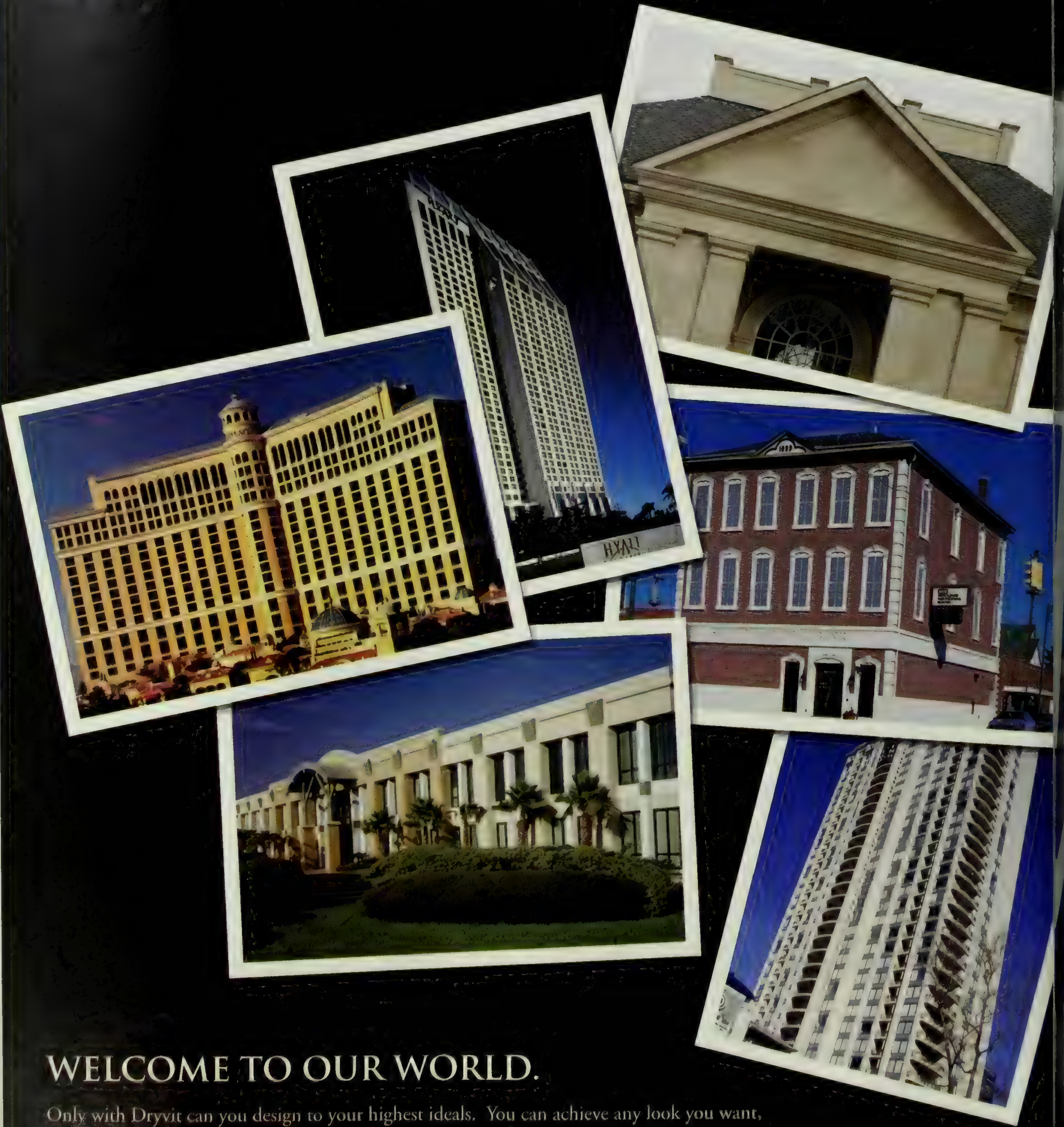

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Record News

Highlights

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p.34 **OMA building could transform Louisville**
p.36 **Libeskind designing high-rises worldwide**
p.44 **On the Boards: *Out There***

Super Bowl spurs demolitions in Detroit

Hosting Super Bowl XL last February spurred Detroit's civic leaders to conduct a three-year makeover of its downtown, long known for empty buildings and deserted streets. New sidewalks and street lights were installed; office towers were converted to loft apartments and condominiums; new shops and estaurants opened in once-empty storefronts. As a result, downtown hasn't looked so good in years.

But the most controversial aspect of this makeover was the city's demolition of several historic structures in the drive to get ready for the Super Bowl. Among the buildings to fall in the weeks and months prior to he game on February 5 were the andmark Statler Hotel, a well-known 914 high-rise; the Madison-Lenox Hotel, a more modest, eight-story tructure that was part of the city's Madison-Harmonie Historic District; nd the Donovan Building, a circa-920 office building by architect lbert Kahn that once housed the Motown Music headquarters. Several maller structures fell, too, leaving big aps in the downtown streetscape.

Part of the sting in losing these uildings was that, in some cases, he city seemed to ignore basic andmark protections afforded by tate law. Detroit's Historic District dvisory Commission twice refused Mayor Kwame Kilpatrick's request o tear down the Madison-Lenox; he mayor's building department hen condemned the building as nsafe and razed it anyway.

The dispute over demolition volves two competing redevelopment philosophies. On one hand, here is Mayor Kilpatrick's "clean, afe, beautiful" mantra for cleaning up owntown, in which the city targets its o-called dinosaur buildings—those that have been vacant for at least 10 years—for either fast-track redevelopment or demolition.

On the other side is an array of enthusiasts, architects, and investors who see preservation as key to the city's revival. They note that livable and walkable areas such as Detroit's Greektown, Corktown, Midtown, and Harmonie Park consist of historic properties patiently restored by investors. Once threatened with demolition, these districts today rank as some of the city's most appealing and diverse neighborhoods.

George Jackson, president of the Detroit Economic Growth Corporation, led much of Kilpatrick's clean-up effort. He says he turns to demolition only as a last resort.

"Economic reality does play a role," he says. "When you have a structure that is not economically feasible to restore, I think you have to look at demolition. Obviously, you can restore any building if you have the money to do it, but no one is going to restore properties if they cannot make money off their investment." Jackson notes that some buildings, such as the now-lost Statler, had sat vacant for decades. Intensive efforts to structure a financing package for that building failed. Facing the deadline of the Super Bowl, the city opted to tear it down instead of waiting for a savior.

Francis Grunow, executive director of nonprofit group Preservation Wayne, gives Kilpatrick credit for helping developers remake several early-20th-century office buildings downtown into residential lofts. But he worries over the pace of demolition.

Preservationists hope to save the Michigan Central Depot (top left), but it's too late for the Donovan/Motown building (above), the Madison-Lenox Hotel (left), and many others.

"There's definitely been a move to rehabilitate in a way we haven't seen in decades. At the same time, we've lost a lot of key buildings. It's definitely been an accelerated pace of both," he says.

Everyone agrees that Kilpatrick has worked hard to try to restore Detroit's two most famous vacant eyesores: the Michigan Central Depot, a 1914 structure by Warren & Wetmore and Reed & Stem, who designed New York's Grand Central Station; and the Book-Cadillac Hotel, a 1924 Italian Renaissance–style high-rise by Louis Kamper. The city pursued, in vain, a plan to make over the depot (vacant for more than a decade) as its new police headquarters. Detroit still hopes to close on a redevelopment deal for the Book-Cadillac, vacant since 1984.

But even if the city goes to great lengths on individual projects, preservationists like Grunow say there is no overall philosophy that employs historic preservation as an approach to urban redevelopment. This complaint is not new here. City administrations have long been hostile to broad planning schemes, preferring a deal-by-deal approach that often slights preservation.

Preservation groups have been helping to craft state legislation that would make more historic tax credits available for renovation work. Another idea would give legal standing to groups like Preservation Wayne to intervene in lawsuits over historically designated buildings. So far, though, these ideas have not progressed past the talking stage. *John Gallagher*

SPECIAL HURRICANE REPORT

Planning to rebuild: An interview with New Orleans's master planner

*Last month, John Beckman, principal with Philadelphia firm Wallace Roberts & Todd (WRT), presented a master plan for rebuilding New Orleans [*RECORD*, February 2006, page 26]. WRT was asked to devise a plan for the urban-planning committee of the Bring New Orleans Back Commission (BNOBC), the team of professionals Mayor C. Ray Nagin formed to address the city's woes in the immediate wake of Hurricane Katrina.*

ARCHITECTURAL RECORD: *How did the Bring New Orleans Back Commission end up choosing a Philadelphia-based firm to advise them on urban planning?*
JOHN BECKMAN: WRT has been involved in New Orleans off and on for over 30 years. In 1974, we rewrote the zoning ordinance to permit creation of a downtown development district. We also worked on plans for the warehouse district, which used to be skid row. We completed a master plan for City Park just before the hurricane. Joe Canizaro (local developer and BNOBC Urban Planning Commissioner) was on the board of the group that led the original Downtown Development District, and he suggested I come down and meet with the BNOBC.

AR: *Who is paying for your services?*
JB: Neither the city nor the commission is funding our efforts. Some of the work is paid for by private funds. Some is on an at-cost basis, and we have donated an enormous amount as well. There is no city more wonderful in the U.S. than New Orleans, and if you can't step forward now, when are you going to?

AR: *Many people greeted the plan with distrust. Why is that?*
JB: There is a lot to be angry about. It is a clear case of negligence by the federal government. When you look at the dollars that were expended after September 11, they were completely out of proportion from what happened with Katrina and Rita. Clearly, planning before the storm could have been better—from lack of funding to restoration of coastal wetlands. This needs to be an equitably, and efficiently, managed resettlement of the city so the people who do come back have the services they need. It's a matter of phasing and timing, because everyone is not going to come back right away. The only piece of our action plan that was rejected was the moratorium [four months long, to assess which areas are most feasible to rebuild] on building permits.

AR: *Is the committee working on design guidelines for new construction?*
JB: Not yet. Our plan recommends that the interim guidelines be developed quickly. We also recommended updating the city's master plan, giving it the force of law and placing the control of land use, land development, zoning ordinances, and building codes with the city planning commission. We felt it was important that these activities be taken out of the political realm.

AR: *What types of zoning—for uses and densities—is WRT planning?*
JB: That's going to come out of the neighborhood planning process. The action plan we prepared [at www.bringneworleansback.org] was a recommendation. There also has to be significant input by the city planning commission.

AR: *How is the neighborhood planning process being convened?*
JB: We're setting up teams of residents and leaders supported by professionals and experts—planners, urban designers, architects, cost estimators, civil engineers, etc. Many neighborhoods have already started their planning. The professional teams are largely set up at this point.

AR: *Are there any more solid facts about how many residents have returned and how many unsalvageable houses there are?*
JB: The best estimates that I've seen are that there are now approximately 150,000 New Orleans residents. I do not have an estimate of the number of homes that are unsalvageable. The city and the federal government have given damage reports, but many homeowners are appealing their accuracy. Most people would feel more comfortable with an actual inspection of their properties.

AR: *How are you determining future population estimates?*
JB: It is estimated that by September 2008, New Orleans will have 250,000 or so people. The biggest constraint is habitable housing. My gut feeling is that there may be more people than that because New Orleans is such a rooted place and has such a powerful pull.

AR: *The plan talks about bridge financing and other means to help people to get their houses back. Any prognosis for those, especially since President Bush has repudiated the Baker buyback plan?*
JB: The Baker Bill [which calls for the federal government to buy large swaths of land for redevelopment] would have been very helpful, and it was a big disappointment that it was rejected by the White House. Congressman Baker has indicated that he will propose another version. When I presented the plan to the Louisiana Recovery Authority [on January 13], Baker said everyone who opposed the bill said they would support it if it were modified. There are also CDBG (community development block grant) funds, FEMA funds, U.S. Department of Transportation funds, and various housing agency funds. Another appropriations reques must be submitted to the federal government by July 1. The reaction o the mortgage, insurance, and financ industries will be key, because if they don't provide financial backing people won't be able to rebuild.

AR: *Has this planning process been handled the same as any other would, or have the scope and enormity led you to use other methods?*
JB: We have done plans for larger cities than New Orleans, but there were many factors that made it unusual. For example, the lack of data. The city's computer system was knocked out, so we didn't know how many houses were destroyed, or how many people there were. There were no schools, very limited government to interact with, and a very small pop ulation. When we do a citywide plan, it usually involves hundreds of people and many meetings. We did this in an incredibly compressed time frame, with an enormous sense of urgency.

AR: *How will your plans be affected by the release of FEMA's flood elevation maps? [The maps are supposed to be released by the end of March.]*
JB: Those maps will specify what elevation the first floor of a building needs to be. Absolutely no one know what will come out of that process or even when the maps will be released and it is obviously extraordinarily frus trating for the people of New Orleans

AR: *What effect do you expect the municipal elections, scheduled for April and May, to have on the urban planning committee's progress?*
JB: I hope and expect that the citizens and elected officials of New Orleans will continue to focus on preparation of a long-term recovery plan. I believe everyone understand the stakes involved in building a better New Orleans based on the best of its legacy—a place where everyone can return and a place to which new residents will move.

Interview by Angelle Bergeron

For more of this interview, go to **www.archrecord.com**.

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SPECIAL HURRICANE REPORT

Despite obstacles, some Gulf residents have begun to rebuild

Many Katrina-evacuated homeowners who thought they'd lost everything are finding their homes are salvageable.

Last Thanksgiving, for example, volunteers from New Orleans–based Preservation Resource Center (PRC) cleaned out a badly damaged 1884 shotgun house in the Holy Cross neighborhood of New Orleans. The removals revealed streaked orange and blue board-and-batten walls and sturdy wood floors, which had come out unscathed. The work was sponsored by the PRC and supported by the National Trust for Historic Preservation, to show that some of the city's oldest houses are rehabilitation candidates. According to PRC spokeswoman Sue Sperry, the organization, with paid and volunteer labor, should be able to get 82-year-old Mildred Bennett back into her home for $40,000. Progress now only awaits the restoration of electricity and reliable supplies of water to the neighborhood.

For the many homes that have not suffered significant structural damage, a cottage industry of contractors and volunteers has grown around "gutting out" houses: ripping out water-soaked linoleum, carpet, floors, and cabinets; tearing down Sheetrock; and often throwing out doors and windows to dry out moldy studs. These houses are ready for rebuilding, but homeowners often must battle with insurers about wind damage (generally covered) versus flood damage (either not covered or only partly covered). Others have to fight "red tagging," which denotes that damage is greater than 50 percent, and means they cannot rebuild except above FEMA-mapped flood levels. Those maps are expected by March.

Another cottage industry has built up around getting damage estimates reduced to below the 50 percent threshold. The red-tagging, says PRC's Sperry, was often cursory, done in drive-by visual inspections by nonprofessionals—barbers, mailmen—pressed into service when few professionals were in town. PRC, in fact, has resurveyed houses in historic districts, which cover most of the city. A bulging wall or a tree through a roof was often enough to get a house red-tagged, she says. But such damage is often repaired for less tha apparently intact homes that had actually been flooded. "Only a structural engineer and an architect can assess some of these problems," she says.

Mildred Bennett's shotgun home in the Holy Cross neighborhood of New Orleans was badly damaged inside, but it is still salvageable.

For many homeowners, insurance isn't enoug Only volunteer labor can bridge the cost gap. Sheri Lea Bloodworth, through architect-run aid group Architecture for Humanity, helps coordinate 30-some volunteer groups out of a church in Biloxi, Mississipp Teams head out daily to help residents clean, gut, and treat their home for mold (often using a mixture of trisodium phosphate and household bleach applied with garde sprayers). Plumbers and electricians, usually paid, follow on, and then volunteers return to redo finishes. Labor, volunteer and otherwise, remains scarce, although those willing to sleep in tents or drive long distances to help are earning undying gratitude. *James S. Russe*

Hurricane recovery briefing

AIA members lobby for Katrina rebuilding plan The several hundred architects attending the AIA Grassroots Leadership and Legislative Conference in Washington, D.C., in February took their plans for Katrina rebuilding directly to Congress. AIA chapter leaders visited the offices of U.S. senators and representatives, urging them to support H.R. 4100, also known as the Baker Bill, proposed by Louisiana Congressman Richard Baker (R-LA). The bill would establish a private corporation to oversee development in areas of Louisiana devastated by Hurricane Katrina. The Louisiana Recovery Corporation would, among other things, purchase large swaths of land for planned development, instead of allowing scattered, unplanned development. Among several other pleas to congress, the group lobbied in support of its new sustainable design initiative [RECORD NEWS, February 2006, page 33], which calls for reducing building's fossil fuel consumption by 50 percent in the next five years, and pushed for access to small business health insurance plans for AIA members. *Sam Lubell*

Mississippi school design institute From February 12 to 14, the American Architectural Foundation (AAF) hosted the Mississippi Regional School Institute in Biloxi, Mississippi, part of its Great Schools By Design initiative to improve educational architecture. Discussions took place among 20 of the 22 superintendents from the region and architects and design experts from around the country. Topics included new school locations, construction funding, schools as community centers, community participation in rebuilding, and managing new students. The group says it will hold a spring meeting to examine particular case studies from the area, possibly in places like Pass Christian, Long Beach, and Moss Point. *S.L.*

Libeskind working in the Gulf Shortly after developing buildings for a Atawatuna, a town in post-tsunami Sri Lanka, architect Daniel Libeskind is now working on a community center in Gulfport, Mississippi, which was all but destroyed by Hurricane Katrina. The project, being developed pro bono for the Boys and Girls Club, is being funded by Rockworks, a charity made up largely of music stars.

The 30,000-square-foot cente in the Forest Heights section of Gulfport, will house after-school programs, summer programs, and financial-planning programs for those left jobless after the storm. The design details will be unveiled in the next month or so, says Nina Libeskind, the architect's wife and business manager. She says the firm is now considering further projects in the Gulf area, but has not made any decisions yet. *S.L.*

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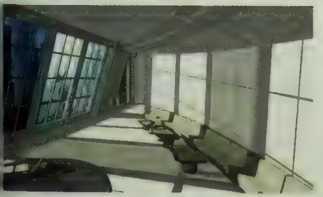

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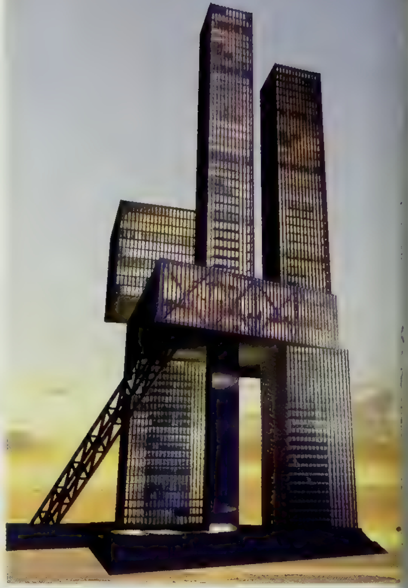
OMA's stacked Louisville Tower would change the city's face

At 61 stories, the multipart Museum Plaza tower in Louisville will be the tallest building in Kentucky, and one of the tallest in the region. The Office for Metropolitan Architecture's (OMA) New York office is designing the building, which was unveiled on February 9. Though it reaches over 100 feet higher than Johnson/Burgee's Aegon Tower, the structure is more of a series of small buildings stacked on top of each other than a monolithic tower. "We've been interested in the question, 'Can something be both a credible whole and a series of parts?' " says Joshua Prince-Ramus, OMA's lead designer on the project.

The 1.2-million-square-foot structure will include 300,000 square feet of office space, a 300-room hotel, 85 luxury condominiums, and 150 lofts. The contemporary art museum for which the building was named will be located at its center, 22 stories in the air, in a common space the architects call "the Island." The Island will serve as a sky lobby for the office building and condos, and it will contain conference space, a gym, a bar, and other amenities. An angled glass-tube elevator will carry visitors from West Main Street up to the Island. Curators will program both the museum and the communal spaces.

While the building's form may be unorthodox, it reflects careful consideration of the site conditions. "We're reconfiguring known parts, not inventing typologies," says Prince-Ramus. The building will be sandwiched between Interstate 64 along the Ohio River and the historic district of West Main Street. Downtown Louisville lacks density, so the architects sought to maximize the program on the small site. The project's diverse commercial components will pay for the cultural components.



Several towers will converge into one building.

The new Muhammad Ali Center, designed by Beyer Blinder Belle, will sit immediately east of the OMA building and will share an elevated plaza. Philanthropists Steve Wilson and Laura Lee Brown, developer Steve Poe, and attorney Craig Greenburg are developing the $380 million project, though the city and state are expected to contribute $75 million for site work. The developers expect to complete the project by 2010. *Alan G. Brake*

Plans unveiled for larger, more active Javits Center in New York

On January 23, the Empire State Development Corporation (ESDC), which encourages business development in New York State, released designs and a master plan for the renovation and expansion of the Jacob K. Javits Convention Center on the west side of Manhattan. The new scheme (below) will double the center's size, increasing exhibition and meeting-room space by more than 1.3 million square feet.

British architect Richard Rogers is designing the project, located on 11th Avenue between 34th and 38th Streets, with New York–based FXFOWLE Architects and A. Epstein & Sons. The design is still being worked out, but so far it calls for a building with an airy, new 100-foot-tall, glass-enclosed entry and concourse and a wide, tree-lined pedestrian corridor along 11th Avenue. The new facility, says Bruce Fowle, FAIA, principal at FXFOWLE, will not only feel more spacious but will contain a much more active facade than the present one, which appears quite dark on most days. The concourse, whose glass will be as clear as possible, will contain glass elevators and exposed stairways, and probably retail, all of which will be visible from 11th Avenue. Large, colorful banners and LED displays about current exhibitions will also be visible from the street. The new concourse will contain protruding, boxlike spaces for preshow meetings, a large brise-soleil along 11th Avenue to minimize glare, and plantings throughout. The plan also creates a new park and retail space at 11th Avenue between 39th and 40th Streets, and leaves 40th Street open to allow (limited) pedestrian access to the waterfront. The architects are master planning residential and commercial development south of the center. That property is being made available by moving the center's marshaling yard to the north side of the building, into a new six-story structure between 39th and 40th Streets.

The current Javits Center has only 790,000 square feet of exhibition space, making it quite small for a city of New York's size. The expansion will also add two more floors above most of the existing facility, and will include a comprehensive renovation of it. Fowle says it is unclear what elements of the existing structure, designed by Pei Cobb Freed between 1979 and 1986, will remain at the end of this renovation. The project has been in the works for some time. In June 2004, St. Louis–based HOK was selected to design a sketch for the extension, although a convention center spokesperson called that plan a "starting point."

Critics hold that the renovated center will still leave too much of the Hudson River waterfront to the west of the Javits inaccessible. They also wonder if the land to the building's south will be appealing to local developers. "Given the current market for office space, it is not clear that developers will line up to build office buildings between the Javits Center and the open rail yard to the south," said the Regional Plan Association in an e-mail sent out just after the unveiling.

The first phase of building will cost about $1.7 billion, according to the ESDC. The city and state will contribute about $350 million each, and another $645 million is being raised through bonds backed by a $1.50-per-key surcharge paid by the local hotel industry. Construction of the first phase is expected to be finished in 2010. Other phases will include construction of a new convention-center hotel across 11th Avenue from the center. *S.L.*

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Despite Freedom Tower setback, Libeskind is building skyscrapers around the world

Daniel Libeskind has never built a skyscraper. His most famous high-rise is one that will never be built: the original concept for the Freedom Tower in Lower Manhattan. That crystalline, tapering structure has now become an obelisk on a concrete base designed by Skidmore, Owings & Merrill.

But don't feel too bad for him. Thanks partly to fame developed from the World Trade Center competition and partly to Studio Libeskind's impressive list of contacts, developers all over the world have asked the architect to design high-rise condominiums. His firm has secured commissions for more than 10 skyscraper projects in the past two years. These include towers in Singapore; Sacramento, California; Milan; Toronto; Warsaw; Covington, Kentucky; Brescia, Italy; and three more undisclosed locations in the U.S., Korea, and Europe. The firm is so much in demand that its employees now number 55—up from 26 when it moved to New York in 2003.

While diverse in form, most of the high-rises display some degree of the original Freedom Tower's sleek, tapering profile and angular geometry. Many are formally and programmatically advanced, like the 31-story Green Emerald Tower in Milan, which is in the city's new 64-acre fashion and business district. The tower curves as it rises like an elongated bandshell, which helps it to limit harsh sunlight while making a dramatic statement next to towers by Arata Isozaki and Zaha Hadid. The Emerald Bay towers in Singapore (the tallest is 43 stories high) employ similar curves—in this case to maximize views of the nearby waterfront—and utilize "gardens in the sky," vegetation-filled bridges connecting buildings at upper floors.

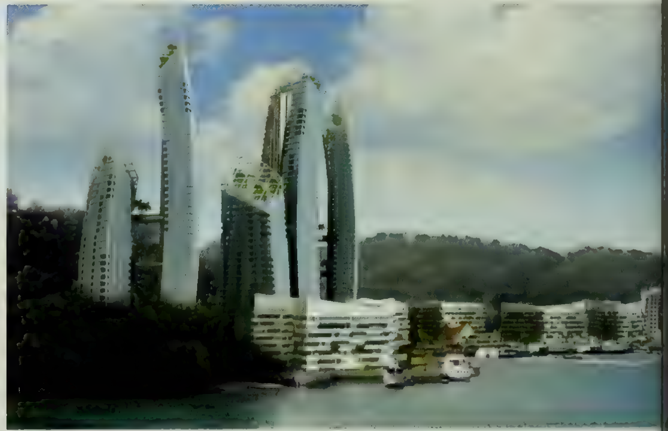
An angular tower in Warsaw, Libeskind's hometown, appears almost as if it were two towers intersecting at sharp angles. Other projects, like those in Sacramento and Covington, have been criticized for their fairly conventional shapes, tapering near the top like Libeskind's visions at Ground Zero, and embellished largely by balconies that form exterior designs.

Libeskind's success in this field is not just a result of fame or ability; it's also a product of developers' increasing desire to use design architects to woo tenants and investors. The architect is also willing to work on a building type that some in the top echelons of the field look down on as a sellout. He notes that such projects are often vital to jump-starting neighborhoods, and even cities' fortunes, and they have a much greater impact than the smaller niche projects that many of his contemporaries explore. Associate Yama Karim admits that many of these projects stray from the exploding shards and folding planes that the firm is known for at lower elevations. But he doesn't see any of them as compromises. "We don't compromise. It's about making things that work. We work hard to make the economic realities of these types of projects work, but we want to avoid building typical developer buildings."

As for whether he's cut out do design high-rises, Libeskind responds, "Architecture is architecture. If you've mastered building on a smaller scale, then you can build something bigger."

In addition to skyscrapers, Libeskind will have a number of other new projects completed by 2008, including a German military museum in Dresden—which is ironic, he admits, since he also built the Jewish Museum in Berlin. Other works include the New Center for Arts and Culture in Boston, the Denver Art Museum, and a retail complex and hotel in Las Vegas. And how does he feel about the situation at Ground Zero, the projec that helped make him, but also came close to breaking him?

"I'm the only one who's not disillusioned," he says. "The process is inherently difficult, and I knew that. But the core of the project is still there." *S.L.*



Tower projects include (clockwise from top left) Green Emerald Tower in Milan, Emerald Bay in Singapore, Warsaw Tower in Poland, Hummingbird Centre in Toronto, and Union City condo in New Jersey. Other skyscrapers are being built in California, Kentucky, Germany, and Korea.

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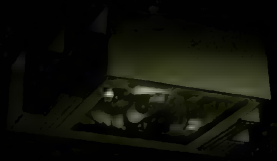

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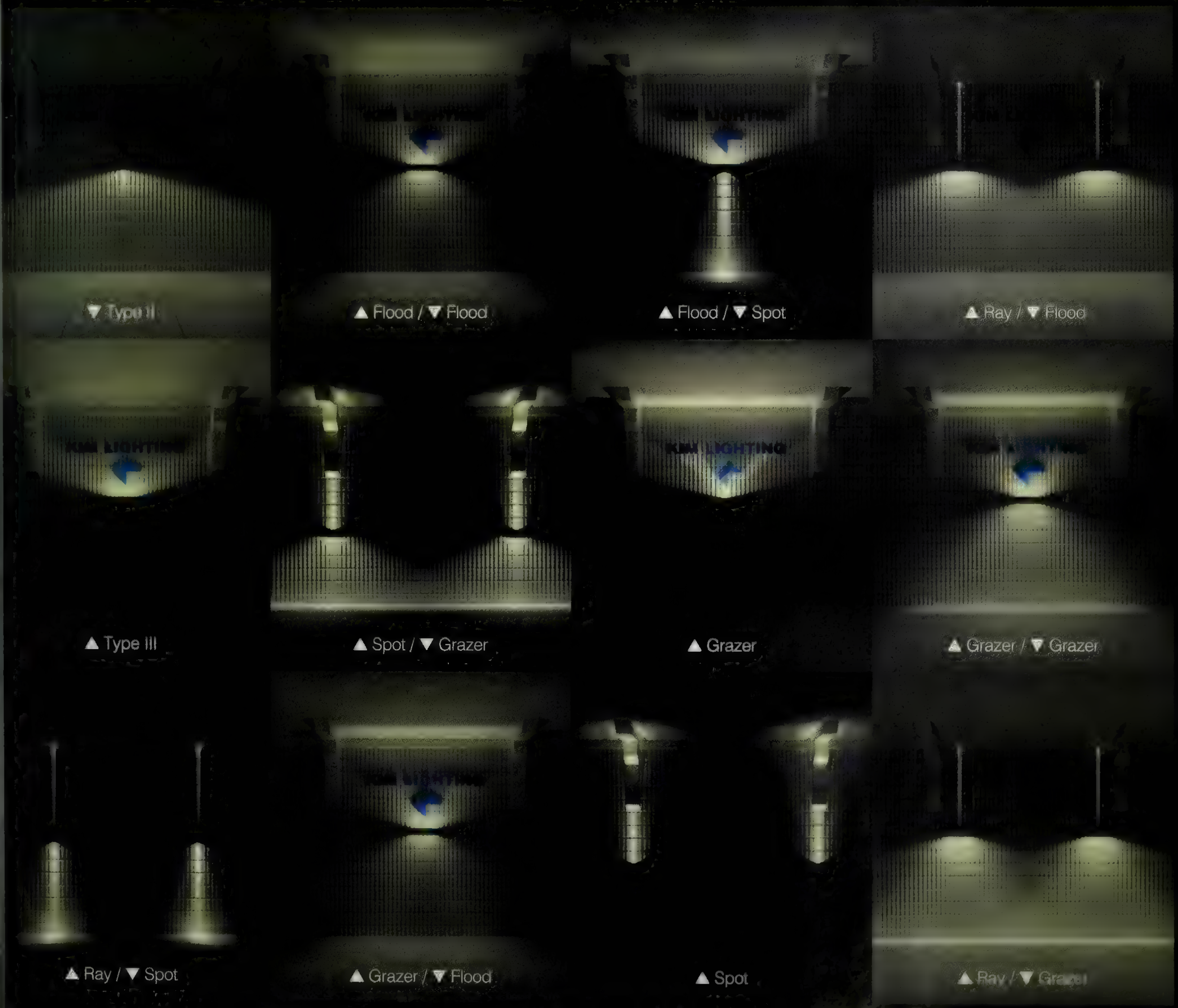

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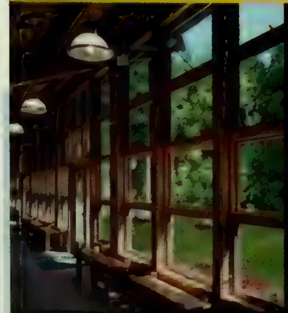

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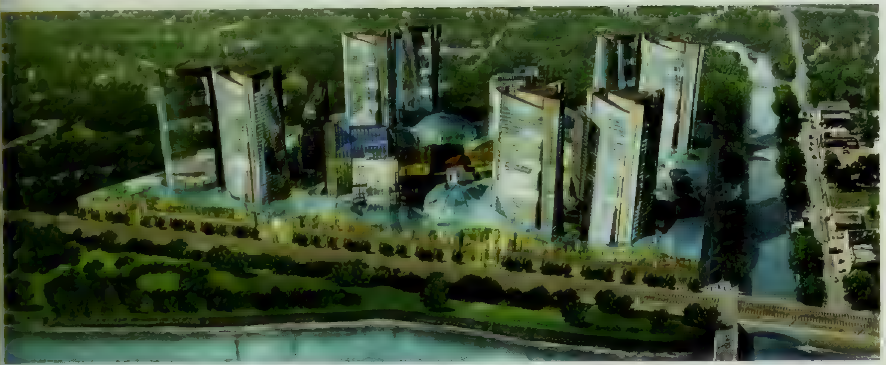

estiny USA, one of largest building projects in U.S. history, n serious jeopardy

espite a January lawsuit in New York Supreme ourt that it hoped would resolve matters, yracuse, New York–based Pyramid Companies mains locked in a dispute with the city of yracuse over financing for Destiny USA (rendering ove), a massive, $20 billion retail, resort, and search complex proposed on former industrial nd on the north side of the city.

The argument, revolving around the city's fusal to accept Pyramid's financing proposal, has uttled Destiny's ground breaking and, Pyramid aims, created financial pressures that forced it lay off 90 percent of Destiny's more than 200-rson design and construction team in January.

When Pyramid first proposed Destiny in 00, the developer planned a modest 848,000-uare-foot expansion of Carousel Center, a 5-million-square-foot shopping mall. But the proam quickly grew to encompass more than 100 illion square feet, including 1,000 shops, 80,000 tel rooms, a 40,000-seat arena, a water park, lf courses, and a technology park that the develers claim will one day overtake Silicon Valley.

Syracuse officials, eager to stimulate tourism, tially welcomed Destiny. In 2000, the city tended a 1988 agreement with Pyramid, keeping e center off property-tax rolls through a payment-lieu-of-tax (PILOT) arrangement, and developed similar PILOT plan, worth up to $200 million, for stiny. PILOT deals allow private developers to ild on public land without holding the title. The city w claims that Pyramid broke its PILOT agreement Destiny last summer by switching from private ancing for the project's first phase to a county nd–sponsored loan package worth over $300 llion. Other financing is planned to come from vate sources as well as county, state, and federal nds. After the city said its PILOT agreement pired at the end of last December, Pyramid sued.

All arguments aside, if plans for the visionary project are fulfilled, its main elements would be located under the world's largest glass canopy roof, in nine themed zones with names such as the "Marquis District" and "Tuscany." To date, these names are the only hints at an architectural aesthetic. Destiny's design team, headed by Pyramid architect Mike Wetzer, has finalized only the designs for its first phase, the expansion of Carousel Center.

Pyramid's C.E.O. Robert Congel claims that Destiny will "free humanity" from its dependence on fossil fuels, setting an example by powering itself through photovoltaics, windmills, and hydrogen fuel cells. Mike Lorenz, C.E.O. of the subsidiary developing Destiny, claims it will revolutionize the construction industry, with design and construction occurring in real time using modeling software linked to factories. Building modules will then be erected on-site by the same employees who will become the sales associates in Destiny's stores.

If this approach to construction sounds novel, that's the point. Destiny is located within a day's drive of 130 million people, and Lorenz predicts visitors would come not just to shop, but to marvel at the complex's innovations. But visionary projects often depend on deftly timed financing, which is now in limbo. And besides the scoffing of incredulous critics, Pyramid has other troubles. Existing Carousel Center tenants filed suit last fall to stop the developer from breaking their leases to build Destiny. In early February that case went before Judge John Centra, who is hearing Pyramid's suit against the city. At press time, it was not known when Centra would rule on either case.

Pyramid has a reputation for overcoming setbacks, but local residents are suffering from what one observer calls "promise fatigue." If Destiny ever gets built, skeptics say, it will be far smaller than the developer's vision. *James Murdock*

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Ground Zero update

As it has been for quite some time, the World Trade Center remains under a cloud of uncertainty. New York City Mayor Michael Bloomberg has assaulted developer Larry Silverstein's plans for the site more vehemently in recent weeks. Bloomberg and some city agencies have charged that Silverstein underinsured his buildings at Ground Zero, that he won't be able to attract enough office rent to make a profit, and that he is holding up development of towers numbers three and four on the site. Silverstein has refuted all three charges. Meanwhile, the Port Authority of New York and New Jersey, which owns the land on the site, has offered to take over some of Silverstein's leases, contending that it will be able to expedite the building process. Silverstein does not seem receptive to this idea. And despite all the discussion, there are still few signs of building.

Snøhetta building will shrink dramatically

Nowegian firm Snøhetta is significantly changing its design for what was once the cultural complex at Ground Zero. The new scheme is now being described by officials as a visitors center. The project's design has not yet been unveiled, but it will be about a fifth as large as the original building, according to the World Trade Center Memorial Foundation (WTCMF), which is heading the project's development. Snøhetta was chosen to design the building, once set to hold the International Freedom Center and the Drawing Center, in fall 2004. That plan was scrapped last fall amid controversy over the content of both museums, as well as the building's interference with the World Trade Center Memorial.

The visitors' center will include ticketing, visitor services, and 9/11-related exhibition space, which will complement the material in the museum under the WTC Memorial, according to the WTCMF. The building will now take up about a fifth of its original's space, shrinking from 250,000 square feet to about 60,000. Its location will shift south, freeing up circulation around the Memorial plaza. Frank Gehry's performing arts center, which is to be located across Fulton Street from the visitors center, is still being planned, but no designs have been released since Gehry was chosen in the fall of 2004.

7 WTC finds tenants

After waiting for some time to attract tenants to 7 World Trade Center, just north of Ground Zero, Silverstein has now leased space to three tenants. The 52-story building, which should be complete in April, was designed by Skidmore, Owings & Merrill, the firm designing the World Trade Center Freedom Tower.

In early January, Silverstein announced that Ameriprise Financial, an asset-planning and insurance company, signed a 10-year lease for 20,000 square feet of space in the building. The company's New York office is to occupy about half of the building's 39th floor. On January 25, officials from Beijing-based Vantone Real Estate signed a term sheet for 200,000 square feet of space—the top five floors—in the 1.7-million-square-foot building. The company has said that it will seek Chinese business firms to rent the space. Back in December, the New York Academy of Sciences agreed to lease 40,000 square feet in the building.

Critics have been complaining for some time about the 52-story building's long-standing vacancy—which many said was a harbinger of the entire site's overdependence on office space in a market that still seems to favor residential. Many hold that the small amount of leased space does little to make the building financially feasible. *S.L.*

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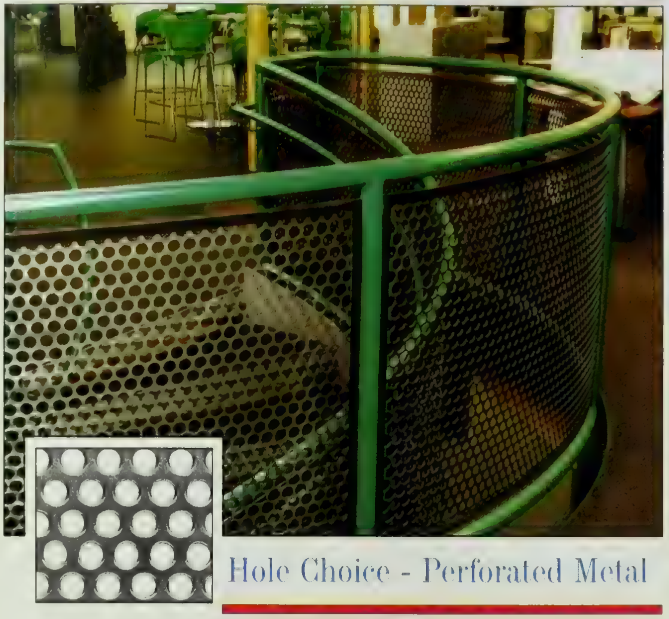

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Record News

Building bust? Slow sales and high costs doom major Las Vegas projects

Las Vegas is known as a place where buildings are imploded before their time. Right now, projects are getting imploded before they even get out of the ground. After experiencing a heated building boom in recent years, developers are canceling plans for high-rise residential towers near the Strip because of rising construction costs and low sales.

Southern Nevada leads the country in population growth, adding 7,000 new residents per month, and recent construction growth stems from a 99 percent increase in land prices in the past twelve months. John Restrepo, principal of Restrepo Consulting Group, a Las Vegas research firm, says there are 60,000 condominium and 19,000 condo-hotel units currently proposed, planned, or under construction in the Las Vegas Valley.

But Restrepo adds that the proposals are too ambitious for any market: "We anticipate that less than 25 percent of those units will actually be built in the next five years."

Busy contractors in the area are quoting prices week-to-week due to rapid material and labor cost increases, which have climbed 10 percent to 30 percent over the past year, say local firms. As a result, slow-selling projects must budget enough money into the development for construction inflation.

Icon Las Vegas is one of several scrapped projects.

Related Las Vegas, a venture between The Related Companies, New York, and The Related Group o Florida, called off its Icon Las Vegas project on January 6, due to "drastically" escalating construction costs. The $325 million, 514-unit development along Convention Center Driv just east of the Strip, consisted of t 48-story glass-and-concrete tower Designed by Arquitectonica, with int riors from The Rockwell Group, the 4.5-acre project was nearly sold ou when Related pulled the plug. The company experienced six-month delay in con struction due to a laws filed by an adjacent riv project that complaine of obstructed views. By starting time, the costs had risen too steeply.

Diversified Real Estate Concepts, Chicago, canceled its $600 million, 825-uni Aqua Blue condo-hote off-Strip project in Jul because of high buildi costs. The Jeffrey Beers–designed development had basketball star Michael Jordan as an investor, wit plans for a Jordan-branded steakhouse, café, and athletic center.

Other projects are being sold to capitalize on the region's escala ing land values. Australian Develop Victor Altomare sold the 0.68-acre parcel for his planned 21-story, 23 unit Liberty Tower condo project along the Strip in early January for $5.5 million. The land's original pri tag had been $900,000.

"Only 13 of the valley's 107 planned projects have broken ground thus far, and just 10 have gone vertical," Restrepo reports. "Experience, financing, location, and branding remain the key ingr dients for a project's successful transformation from a Web site in a vertical reality." *Tony Illia*

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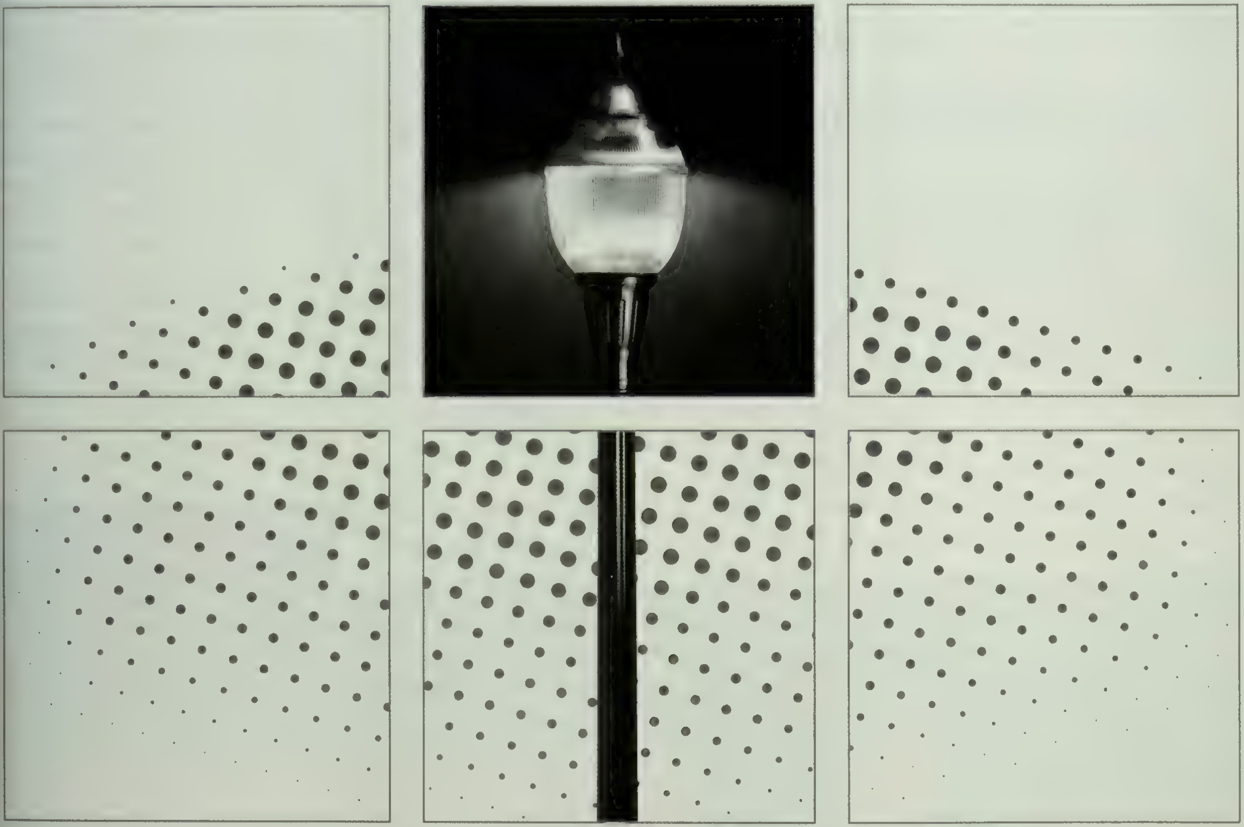
TOTAL
UPLIGHT



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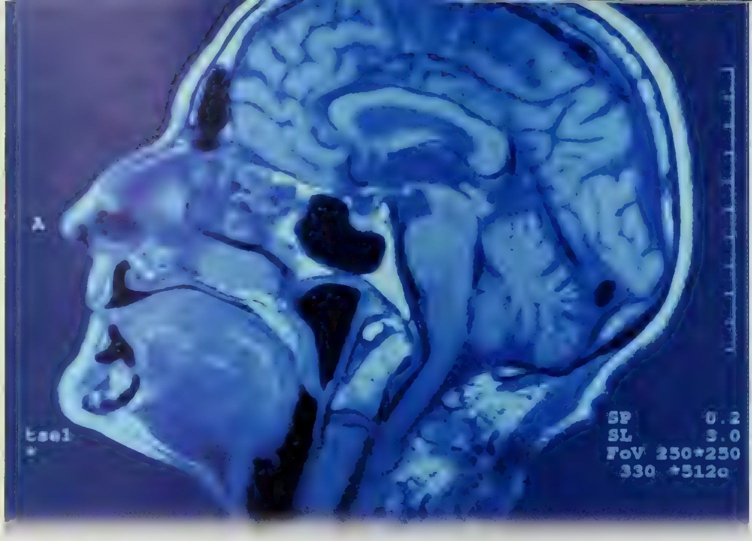

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MRI machines have changed the face of medicine. They allow physicians to quickly make a thorough diagnosis without the need for costly and even painful exploratory surgery. Installation of these machines, however, can be a challenge for design professionals. They're too large to fit through most doorways and have even more trouble with elevators.

While we obviously can't take credit for MRI technology, Bilco roof hatches do provide an ideal solution to this installation problem. They can be specified in just about any size to accommodate even the largest equipment and feature easy operation, and durable, weather-tight construction.

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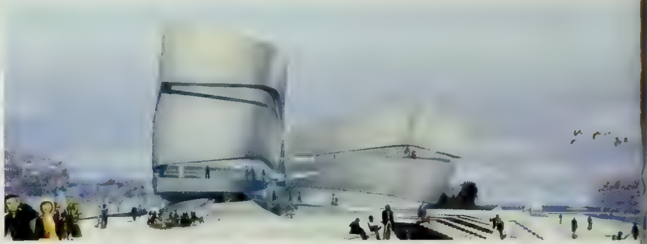


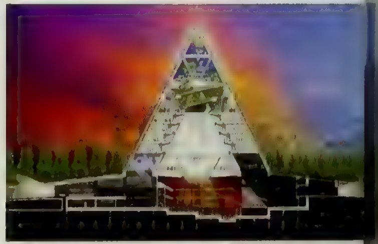
UN Studio revamping Wellington Harbor

Dutch firm UN Studio has won a competition to design the Te Papa museum extension in Wellington, New Zealand. The firm is planning a free-form structure that recalls the flowing design of its Mercedes Benz Museum in Stuttgart, Germany. The 38,000-square-foot extension will stand beside the existing Museum of New Zealand Te Papa, dedicated to preserving the nation's heritage, which was built in 1998 on the capital's waterfront. Melbourne-based architect John Wardle was also awarded first prize in the competition for his design of a neighboring mixed-use development.

Visitors will see nearby Waita Park through curving horizontal sli in UN Studio's building. The alumin skin wraps around the building's main organizing structures: a foye a spiral ramp, and four overlappin exhibition spaces. A tearoom and raised, outdoor Chinese garden a also included in the design propos

The new extension will exhibit contemporary art and traditional Maori art and will be connected to the original museum by an underground passageway. Construction c the entire $34 million waterfront redevelopment scheme is planned begin in late 2007. *Robert Such*

Peace Palace in Kazakhstan near completion

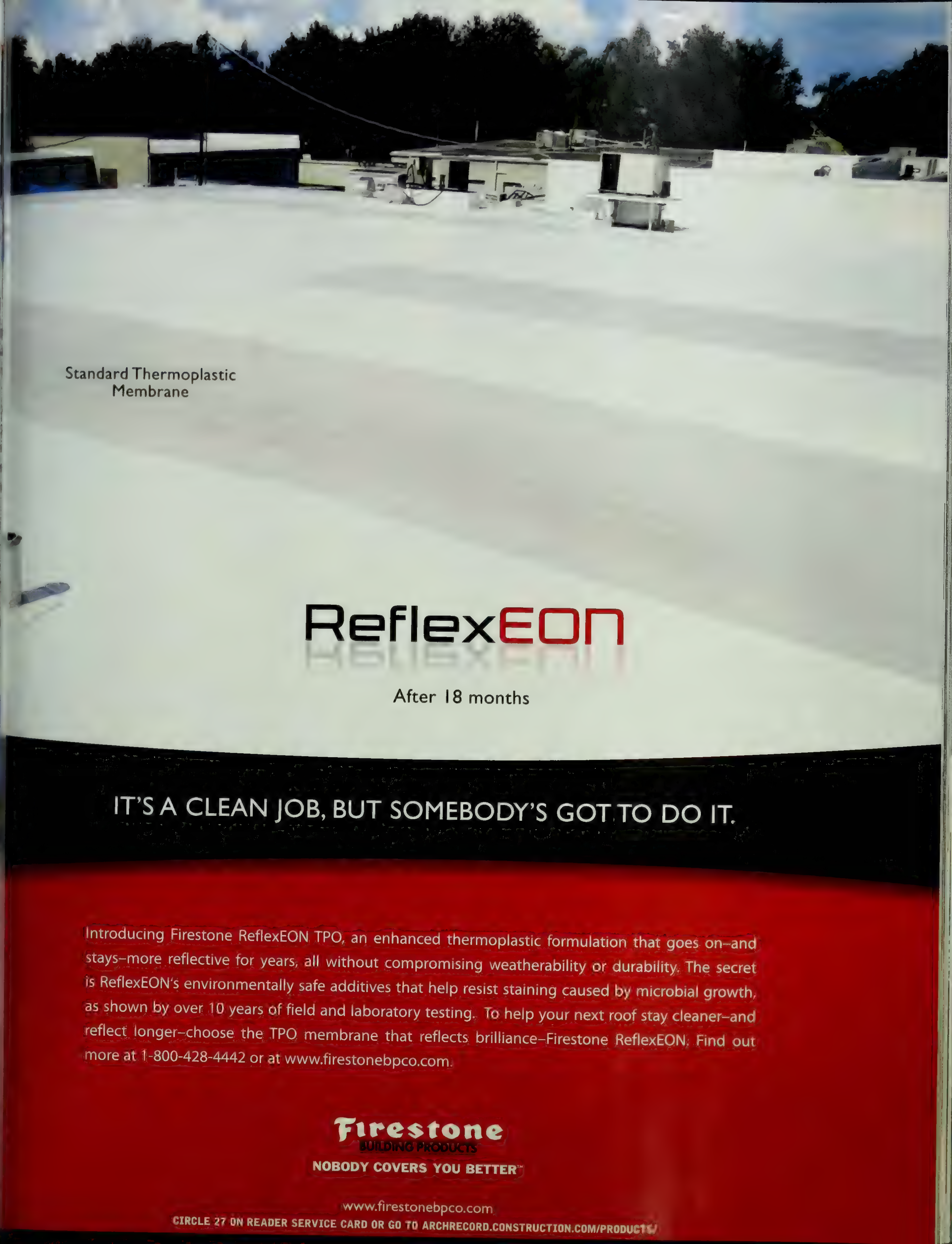


The Palace of Peace, the pyramidal centerpiece of Astana, Kazakhstan's capital since 1997, is scheduled for completion in July. Designed by Foster and Partners, the palace, meant to be a symbol for all faiths, will host the Congress of Leaders of World and Traditional Religions in September.

Foster was selected via competition in fall 2004. When complete, the project's design-and-build process will have taken under two years. This is especially impressive considering Astana's extreme climate, with temperatures ranging from minus 40 degrees to plus 104 degrees Fahrenheit. To avoid losing time, much of the building, including the skin of diamond-lattice steel clad in pale gray stone, was manufactured off-site. The project's cost is a state secre

The palace is intended to re resent unity; its form was chosen because it has no negative religi or ethnic connotations. Its dimensions—200 feet by 200 feet by 200 feet—also reflect this theme The building, organized around a full-height atrium, will house a 1,500-seat opera house, a library museum, and a conference hall.

Since 1997, the population o Astana, a former grain station, ha risen from 250,000 to more than 600,000. *Adam Mornement*



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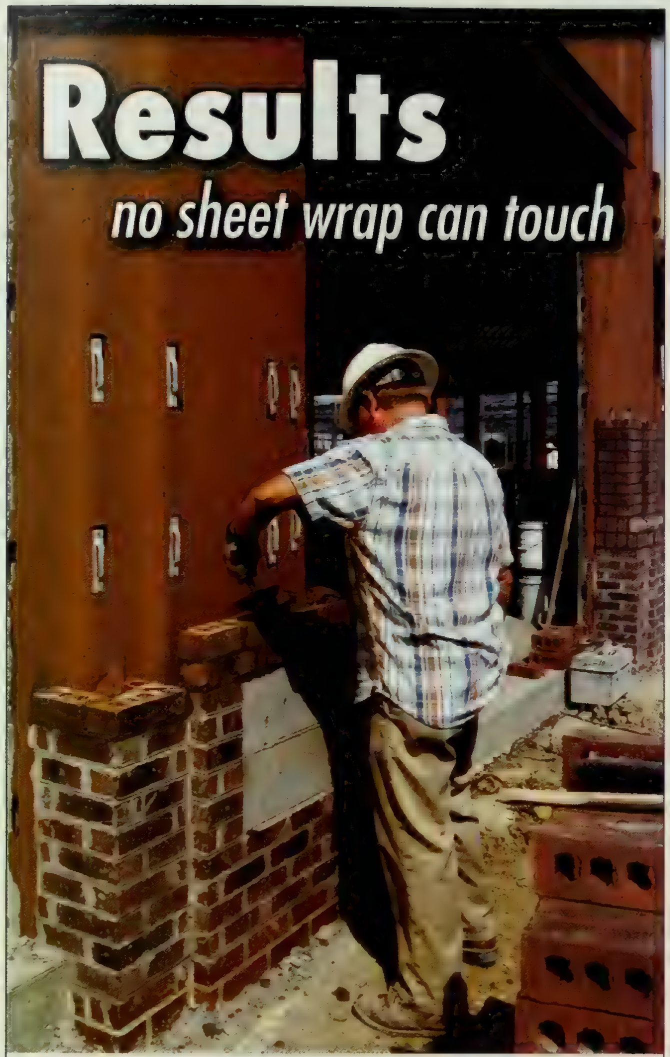
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The future of sustainability: Arup planning green city in China

With its booming economy and often-unchecked development, China has raised serious concerns about the health of its environment. But the country is starting to move in a different direction, as evidenced by a plan being developed by Arup to build what it calls the world's first sustainable city.

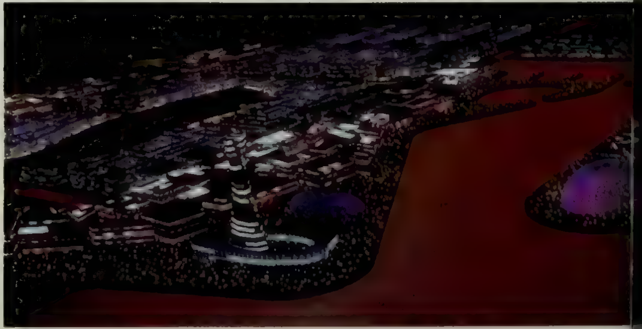
The firm recently signed a contract with the Shanghai Industrial Investment Corporation (SIIC) to develop the city, called Dongtan, located near Shanghai, on the third-largest island in China. Three quarters the size of Manhattan (34 square miles), the site is now mostly agricultural land. But by 2010, when the 1,482-acre first stage is expected to be complete, it will be a mixed-use city of mostly 5-to-8-story buildings. Three villages—each with its own housing, shops, and schools—will converge at a city center.

Minimizing the environmental impact of all this development is essential to the project's mission. "If growth in China continues as it has until now, they're going to permanently damage the place," says Arup principal Peter Head, who is leading the project. "They hope that by ignoring the way the west has industrialized, they'll be able to keep growth growing while reducing the impact."

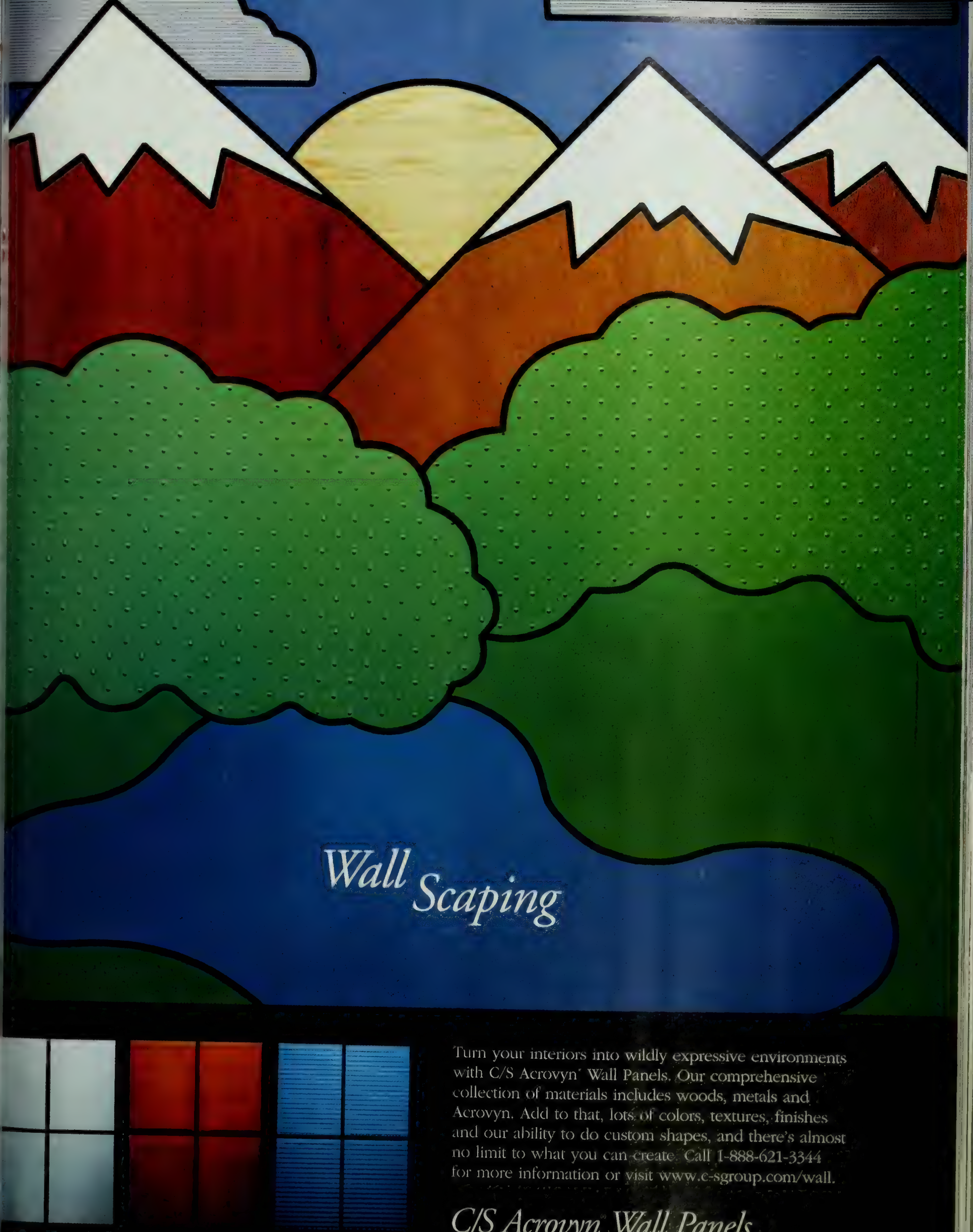
Sustainable development runs through practically every element of Arup's master plan, which is a work in progress. Public transportation will be plentiful and encouraged. Many streets will be arranged as service roads, not through roads, to promo walking, biking, and public transportation. Cars and trucks will use hydrogen or fuel cells, rather than f sil fuels. Buildings will harness ene from wind turbines, photovoltaic panels, and converted waste. They will also be constructed using orga and biodegradable materials, whil refuse can be either converted int energy or turned into compost via machine called an anaerobic diges

The city will be built using a s ecological footprint analysis, which measures how many resources ea inhabitant consumes. The city will call for a footprint that is about on fifth that of the average U.S. city, a about one fourth of a major Chine city. The island will remain about 40 percent farmland and thus sel sustaining. Most of the residents, adds Head, will live and work nea to reduce commuting.

Design guidelines have not b developed yet, says Head. But the SIIC plans to build a major tourist attraction and hold competitions f iconic buildings, targeted to be com pleted in time for the 2010 Expo i Shanghai. Dongtan should becom model for future development in China, says Head. But it will also, h adds, allow the Chinese to develo environmental expertise and gree products that they can then sell the rest of the world. *S.L.*



A rendering of the city, which would be sustainable in almost every way.



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News Briefs

London finalizes Olympic planners On January 17, London's interim Olympic Delivery Authority announced that the master-planning team responsible for the city's 2012 Olympic bid last year, including Foreign Office Architects, HOK Sport, Buro Happold, Allies & Morrison, WS Atkins, and Arup, will also develop London's Olympic Park. The design of the park's venues will be tendered separately, and this team will design all the infrastructure elements, including roads, landscape, bridges, and waterways.

The team's Olympic proposal.

The Olympic park will be built in Stratford, a neighborhood in East London. As detailed in London's Olympic bid, it will feature nine new venues, including Zaha Hadid's Aquatic Centre (which is already in development), an 80,000-seat Olympic Stadium, an Olympic village, a velodrome, and a media center. Several stadiums that can be deconstructed and moved after the games will also be built there. Updated plans move the park closer to Stratford City, a new business district and transport hub in Stratford, making the park closer to transport, and avoiding an area of land that, if developed, would require the relocation of residents and businesses. *Lucy Bullivant*

Smith designing Great Park On January 23, New York–based firm Ken Smith Landscape Architect was chosen as master planner for a 1,347-acre park in Irvine, California. The Great Park, which officials say may take decades to complete, will be one of the largest in the U.S. Parts of the park, including sports fields, are expected to open by 2008, with the first buildings ready by 2012.

The property is part of a 4,700 acre parcel that served as the El To Marine Corps Air Station for nearly 60 years before it closed in 1999. Last year, Miami-based Lennar Corporation purchased the propert from the Department of the Navy f $649.5 million and then transferre a portion to the City of Irvine.

Smith's plan includes a manmade canyon, a lake that will provide the backdrop to a propose amphitheater, and a linear park that will incorporate a fighter plane museum. The master-plan team includes Enrique Norten/TEN Arquitectos, landscape architects N Lehrer + Associates, public artist Mary Miss, ecologist Steven Hande and environmental engineers Buro Happold. The team will begin work the design following contract negot- tions. Phase I of the project, includ the infrastructure, is expected to cost $401 million. *Allison Milioni*

Nomadic Museum migrates to California After spending la spring in New York, Japanese Architect Shigeru Ban's Nomadic Museum, a temporary art-exhibiti space, opened on January 14 nex Santa Monica, California's historic pier. The museum contains a trave ing show called *Ashes and Snow*, featuring large-scale photographic works by artist Gregory Colbert.

The museum is composed of 152 steel cargo containers stacked and secured in a checkerboard pa tern 34 feet high. The exhibition wa packed into 12 of those containers it traveled from New York. The rem- ing containers were borrowed in Sa

Constructing the Nomadic Museu

a Monica, along with recycled aper tubes for the roof, reusable ooden planks, and gravel and and for the floor. Most of these lements will be recycled after the ow. The museum design team cludes principal architect Ban; ensler, the associate architect; MS Group, the general contractor; d Arup, the structural engineer. The 6,000-square-foot museum will be sassembled and then reconstructed the show travels to other desti-tions, including Tokyo, Berlin, and aris. The Santa Monica exhibition ll be on view through May 14. *S.L.*

mithsonian chooses site for frican-American museum

early 100 years after the idea was st put forward, the Smithsonian stitution has chosen a site to house National Museum African-American story and Culture. January 30, the nithsonian's Board Regents selected prominent 5-acre cation for the ture museum on ashington, D.C.'s all, directly northeast of the ashington Monument. The central e, selected from four final possi-ities, carries great symbolism for e museum's supporters.

"It is quite fitting that the expe-nce of African-Americans takes place among the museums and numents that honor the history d the contributions of all who have ored, sacrificed, and dreamed to ke this country great," said Lonnie nch, the museum's director.

Among the opponents of the ation is Judy Feldman, chair of the tional Coalition to Save Our Mall, a zens group that supports a mora-ium on all new Mall construction. e understand why the African-erican museum wants to be on Mall," she stresses, but she says t a better solution would be to end the Mall's axis to the Potomac River, creating more public space, and to locate the museum on the Banneker Overlook, a raised site located close to the river.

The museum will likely cover some 350,000 square feet. The cost is estimated at $300 to $500 million, half of which will be provided by the federal government. Currently, museum officials have no comment on the design process. For now, the staff is hoping to raise money, acquire collections, and hire a project director. Mr. Bunch aims to open the museum's doors "in under a decade." *Ilan Kayatsky*

Chicago landmark lost in fire

Pilgrim Baptist Church.

Chicago's list of lost architectural treasures grew on January 6 when a fire accidentally set by roofers destroyed the Pilgrim Baptist Church on the city's South Side. Designed by Louis Sullivan and Dankmar Adler, the landmark structure was built as the Kehilath Anshe Ma'ariv Synagogue in 1889.

The distinctive design featured two stepped-cubic volumes, topped by a pyramidal roof. The interior, which held 1,000 people, was noted for its superb acoustics, and the building's second life as the Pilgrim Baptist Church (whose congregation acquired the structure in 1922) made it a haven for the performance of gospel music. Only three of the lower exterior limestone walls, with their characteristic Sullivan arches and incised ornament, remain.

The value of the church's property insurance remains undisclosed but is acknowledged to be less than the many millions of dollars necessary to restore the building to its original condition. Early pledges of financial support have come from the Chicago Pritzker Family Foundation and Governor Rod Blagojevich. *Edward Keegan*

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rincipal of Qua'virarch, feels his way to project design—atmosphere before arithmetic. In Work, we
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ow other universities are engaged in the region's planning process, visit archrecord.com/archrecord2/.**

esign

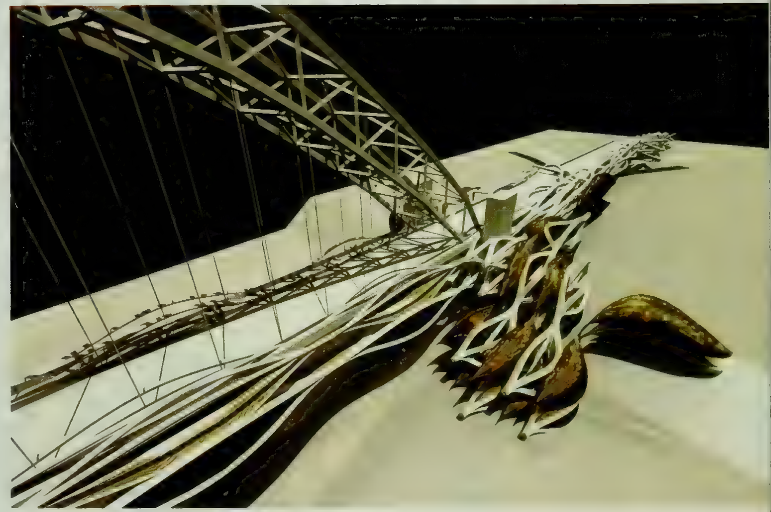
ua'virarch: Psychologies of space

Paul Preissner, AIA, principal of Chicago-based architecture and urban design firm Qua'virarch, certainly has the gene for the mechanics of design: His father and two brothers are all engineers. But his take on the process and practice is much less calculated than theirs—he values atmosphere and intuition above precision and defined environments. In fact, Preissner teaches
class to advanced visual studies students at the Art Institute of Chicago using
rror films as vehicles to understanding the psychology of space—how scary
ovies use atmosphere to dissolve the boundaries between the viewer and the
reen. He then has students explore advanced software techniques to produce
w atmospheres that dissolve the boundaries between surface, structure, orna-
entation, and effect. "Of course, you don't view architecture the way you would
painting or a film," says Preissner, "but horror movies have a certain necessity
d risk that gets you to intuitively see spaces in a different way."

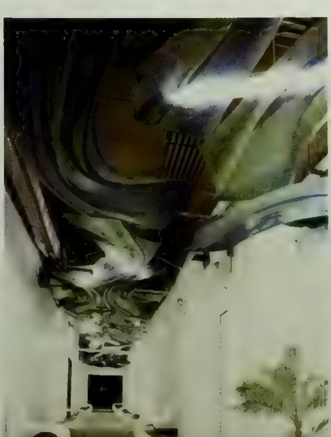
Preissner founded Qua'virarch ("It's just a made-up word," he says) in Los
igeles three years ago, after stints working as a design architect for Kyodo
kkei Architects in Osaka, Japan; as a senior designer at Eisenman Architects
d at Philip Johnson's office, in New York City; and as a junior architect and
oject architect, respectively, in Skidmore, Owings & Merrill's and Wood-
pata's Chicago offices. He says he learned a lot from the firms he worked
, as well as from the cities he worked in. "Living in Osaka and New York City
ve me a love for condensed living and networked systems," he says.

Preissner's work also reflects his love for spaces that are more about
uitive feeling than rationalized geometry. His interior project for Chicago's
uasal, a flotation center that offers visitors time in sensory-deprivation
ks to experience the benefits of weightlessness, seems right up his alley.
eissner was asked to transform the center's interior to create the impression
a nonconfining space. The architect produced flowing patterns of blue-tinted,
lded-fiberglass panels below the ceiling, adding to the heightened sensory
areness visitors experience after spending time in the tanks.

Another project, a competition entry for the expansion of the West End Bridge
Pittsburgh, has Preissner proposing a steel braid across the river with pedestri-
bridge, bicycle path, and periodically spaced observation bubbles. When com-



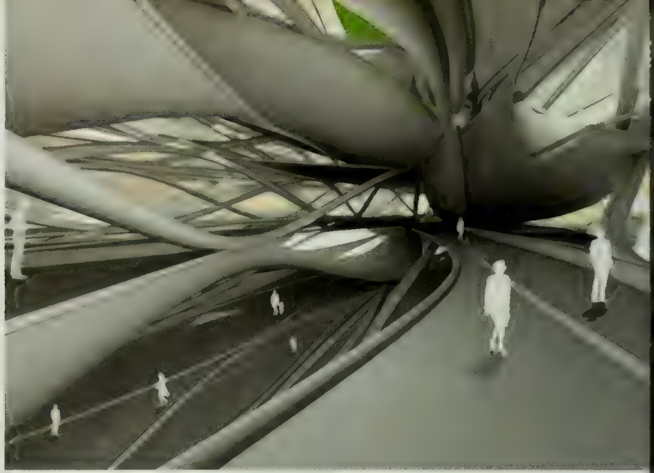
Portmanteau, West End Bridge, Pittsburgh, 2006 competition (ongoing)
Portmanteau is a proposal for a steel pedestrian bridge with a bicycle path and periodically spaced observation bubbles to allow for city and river-life reflection.



AguaSal, Chicago, 2005
The ceiling of this flotation center and spa was created with 74 cast, tinted-fiberglass panels, arranged and mounted to add to the heightened sensory awareness that comes from time spent in sensory-deprivation tanks, which AguaSal specializes in. The panels have the appearance of flowing water, without beginning or end.

Asian Culture Center, Gwangju, South Korea, unbuilt
This proposal calls for the efforts of a group of artists, interior designers, and architectural teams to compose a building system based on its cultural content/program.

National Library of Mexico, Jalisco, Guadalajara, unbuilt
The intricate exterior structure of this proposed public library would exemplify the complex activities within. The building would provide a warehouse of learning and a public social center housing an abundance of media.



pleted, the bridge will close the loop in the trails around Pittsburgh's three rivers. Preissner's design "has neither a beginning n an end," he says, "and it lives in a moment of passion and emotion." For Preissner, inspiration comes from emotion. "I don't thi of my work as sculpture," he says, "but I am inspired by the work of immersive artists like Matthew Barney. I understand the realisms architects have to face," he says, "and restraint is okay, because it pushes you, but ideally I appreciate less obviou environments—grittier, less defined. A torn edge is more interesting than a clean-cut edge."

With Qua'virarch projects in the works, Preissner also teaches at the University of Illinois-Chicago and at SCI-Arc, in Los Angeles, as well as Chicago's Art Institute. In addition, he is writing a book about the emotional aspects of space. "It's about the ability of architecture to create new feelings," he says, "and how this is done not through a sculptural process, but through expert directing of material. Architecture is essentially choreography, after all." *Ingrid Spencer*

For more photos and projects by Qua'virarch, visit archrecord.com/archrecord2/.

Work

Students take on the damaged Gulf Coast

Universities near the battered Gulf Coast region and beyond have directed the focus of their architecture, landscape, design, and planning departments on the real-life lessons to be gained by efforts to rebuild the area. At Mississippi State University (MSU) in late January, more than 200 landscape-architecture students, armed with maps and photographs, targeted a 75-mile stretch of the Gulf Coast as part of a master-planning study aimed at reviving coastal communities pummeled by Hurricanes Katrina and Rita.

The weeklong project, led by volunteers from international landscape-architecture firm Design Workshop, provided students with a rare glimpse into the professional challenges of rebuilding a natural-disaster zone. "For many students, this is the first time they have engaged in a planning project of this scale," says Jeremiah Dumas, a landscape architect with the firm.

Project leaders selected a site spanning three coastal counties in Mississippi and including an existing rail line located five blocks inland and running parallel to the shore. They then divided students into teams of 10, tasking each with a 6-by-6-mile section of the project.

In preparation for the project, the students spent time sifting through case studies and analyzing the effects of other major storms, such as Hurricane Andrew. Their goal was to devise a sustainable plan that could serve as a model for redevelopment efforts in the region.

Gulfport, Mississippi's Mayor Brent Warr with a student team (above). Design Workshop partner Todd Johnson (right).

"It was a really good opportunity to mingle with design pr fessionals and see where their thoughts were coming from," says Brian Suarez, a landscape-architecture student at MSU.

"The students took a pretty radical stance," says Dumas. According to him, the storm surge leveled large sections of the site—basically everything south of the rail line. But rather than rebuild in the devastated area, the students chose to relocate th coastal communities inland and cluster them around the existin rail line, so as to protect them from fut storms. The relocation would also help revive the shore's natural marshlands a move that could save the local gove ment millions of dollars in beachfront upkeep, says Dumas.

While the study was originally intended as a planning exercise, some speakers who visited the students' pre entation, including Gulfport, Mississipp Mayor Brent Warr, were "thoroughly impressed," Dumas said. "People want to move back, and developers are ther wanting to buy land," he says. "Decisions have to be made quickly, and the reg is in need of these types of planning efforts." *Christina Rogers*

For more information on Mississippi State University's Gulf Coast rebuil ing efforts and others, go to archrecord.com/archrecord2/.

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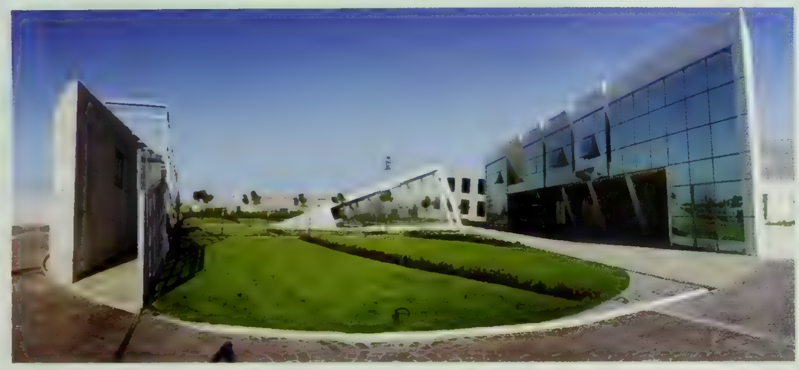
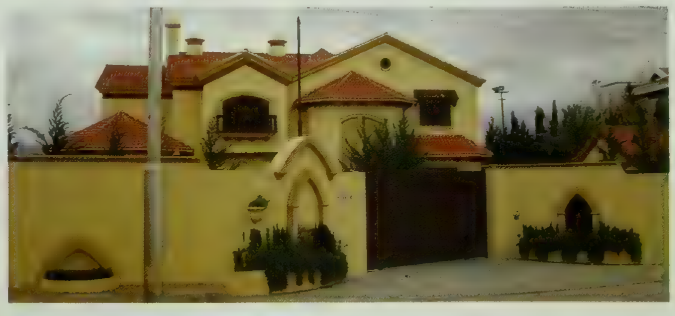
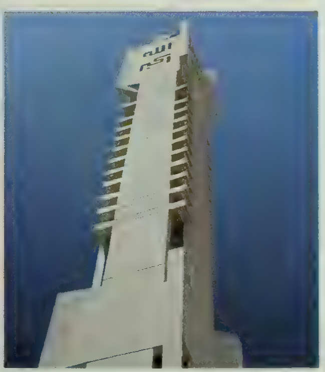
Syria weighs national and international influences in a post-Socialist age

Correspondent's File

By Seif El Rashidi







Three faces of Syrian Architecture: Sinan Hassan's fascinating Chocolate Factory outside Damascus (left); generic, historicist suburban housing stock (below); Wael Samhouri's al-Hasani Religious Center, a hybrid of Brutalist and whimsical (bottom).

ntil the 1990s, visiting Syria was ke flipping through a 1960s design agazine. Oversize cars trundled by tark, aging Modernist buildings. Like Middle Eastern Cuba, decades of ocialist political isolation kept the '0s and '80s away, making Syria a easure trove of now-antiquated odernist design. It also preserved aditional architecture and quality of e: Respectable middle-class fami- es continued to live in well-kept 8th-century houses in the historic uarters of the city (which continue be well-preserved).

Today, with a new, young presi- ent, Bashar al-Assad, promising form, there's hardly an old car in ght. On the highways leading to amascus, slick and Minimalist angar-type auto showrooms with xpanses of gleaming glass and rome supply the country with its ew wheels. They reflect manufac- rers' corporate architectural age, rather than local tastes. imple, age-old Middle Eastern cof- e shops rub shoulders with Pottery arn–style cafés—picture-perfect editerranean bungalows or futuris- c boxes. Gleaming new hotels flect historical or international yles; new government buildings umpet progress. While the local cof- e shops attract old-world Syrians hose interest in understated quality oduced centuries of great architec- re, the new outlets act as magnets r upstart professionals. The new d old cafés represent the two extremes of the present design spectrum, both symbolizing a far less austere Syria trapped between the traditional world and the new.

This dichotomy between established and modern points to some worrying trends in architecture: Some Syrian architects wonder whether public whims will sweep old Syria's architectural traditions away, while others question why there isn't much home-grown appreciation for modern architecture.

Money=superficiality?

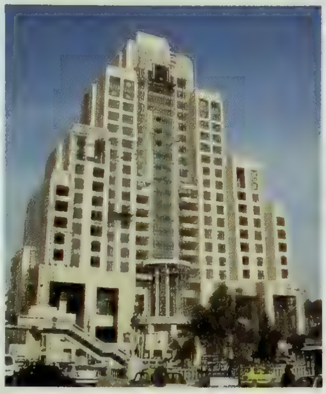
It's Syrians with money that are most worrying to architects. In what were once suburban wastelands, grandiose, stucco-embellished, generic villas are springing up. It's easy to see why the country's architects are unhappy. Damascus-based Sinan Hassan sounds a lot more bitter than an accomplished 40-something architect should. He describes a "passionate, persistent effort to educate, convince, or at least neutralize [clients], along with making sacrifices of all kinds—including financial—in order to get an idea built."

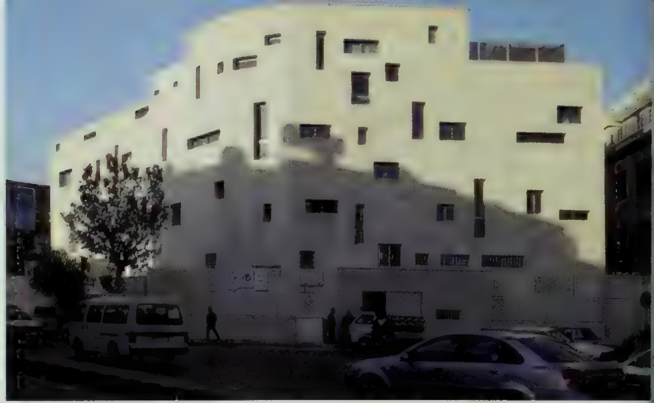
Yet clients' insensitivity to good architecture isn't the only problem. Hassan points out that the Syrian establishment doesn't really like contemporary architecture, and that poor architectural education and decades of isolationism have led to "an abundance of unexploited architectural talent, especially among the new generation, lost between computer graphics, superficial gimmicks, and architectural practices that focus largely on decoration." It's a common short-term reaction to tight-fisted authoritarianism—like college freshmen celebrating newfound freedom by partying to excess. Syria is going through a wave of consumerist exuberance, which in architecture doesn't lend itself to much substance.

The country is taking new directions and rethinking its image. But in the Middle East, searching for an indigenous contemporary identity in architecture is a major problem—and nobody seems to have found a definitive solution. For now, there's a

if El Rashidi is an architectural storian and urban planner working r the Aga Khan Trust for Culture.

tendency to sentimentally represent the past or to cling to the future. Finding a happy medium is difficult.





The new Four Seasons in Damascus (left), by Dar al-Handassah. The Japanese Embassy in Damascus (above), by Italian architect Sergio Calatro

Struggle for a style

Not far from the stores and coffee shops of central Damascus, the just-completed Four Seasons Hotel, by local firm Dar al-Handassah, is a simple, limestone-clad structure that rises ziggurat-style over the Tekkiya Suleymaniya, a 16th-century mosque built by legendary Ottoman architect Mimar Sinan. It's a contrast to the country's unloved Brutalist hotels of the 1960s. Monochrome, and relatively restrained, it makes overtures to the gleaming classicism so loved by the Four Seasons chain. And while it's a clear message that Syria is opening its arms to tourism, once the novelty has worn off, somebody is going to notice that it doesn't have enough architectural flair to explain why it has made the landmarks of old Damascus fade into its shadow. And while representing luxury, the rectilinear building still nods to the past's monumentalism and Brutalism.

Among many new public buildings now in the pipeline, a new ministry for foreign affairs by Syrian architect Bassem Barghouti clearly wants to be futuristic. The gargantuan building follows the old notion that symmetry and formality are inseparable. Like the country's medieval castles, the lower walls are battered; and its bicolored horizontal stripes and central courtyard recall merchants' khans, trade hubs of goods and ideas. Unfortunately, the incorporation of ancient elements into fairly banal, blocky forms seems forced—an example of revivalist kitsch.

The roots of originality

Sergio Calatroni, Milanese designer of the Japanese Embassy in Damascus, expresses both dismay and euphoria about modern architecture in Syria, writing: "Everything is constructed badly, in a rush, cuttir corners. Nothing but chaos and kitsch. But now and then the chaos and kitsch combined together result in unexpected vitality—there is som thing to be learned from ugliness .. A city means life, exchange, energy, stratified culture and old habits. In Damascus, antiquity is everywhere, every wall is an open diary. Here on learns to love the story architecture

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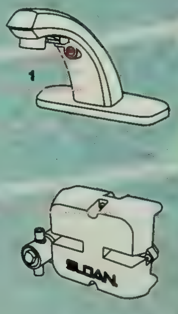

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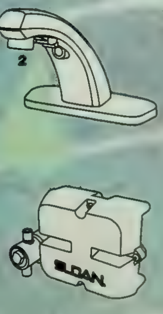

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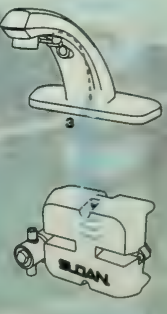

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tells. Here I feel at home."

His own building, the Japanese Embassy in Damascus, is an example of subtle creativity (perhaps inspired by this chaos), and a careful merging of old and new. Sober and punctured by rectangular windows, the building seems to float on facades of Damascus limestone. It recalls the organic nature of the traditional Syrian house. Devoid of the stereotypical design icons of contemporary Arab architecture (arches, screened windows, and geometric patterns), it makes a good case for the possibility of abstracting the past. But whether it will catch on is hardly likely—it is simple, and thus to the layman's eye too similar to old socialist architecture.

Barghouti's foreign affairs ministry.

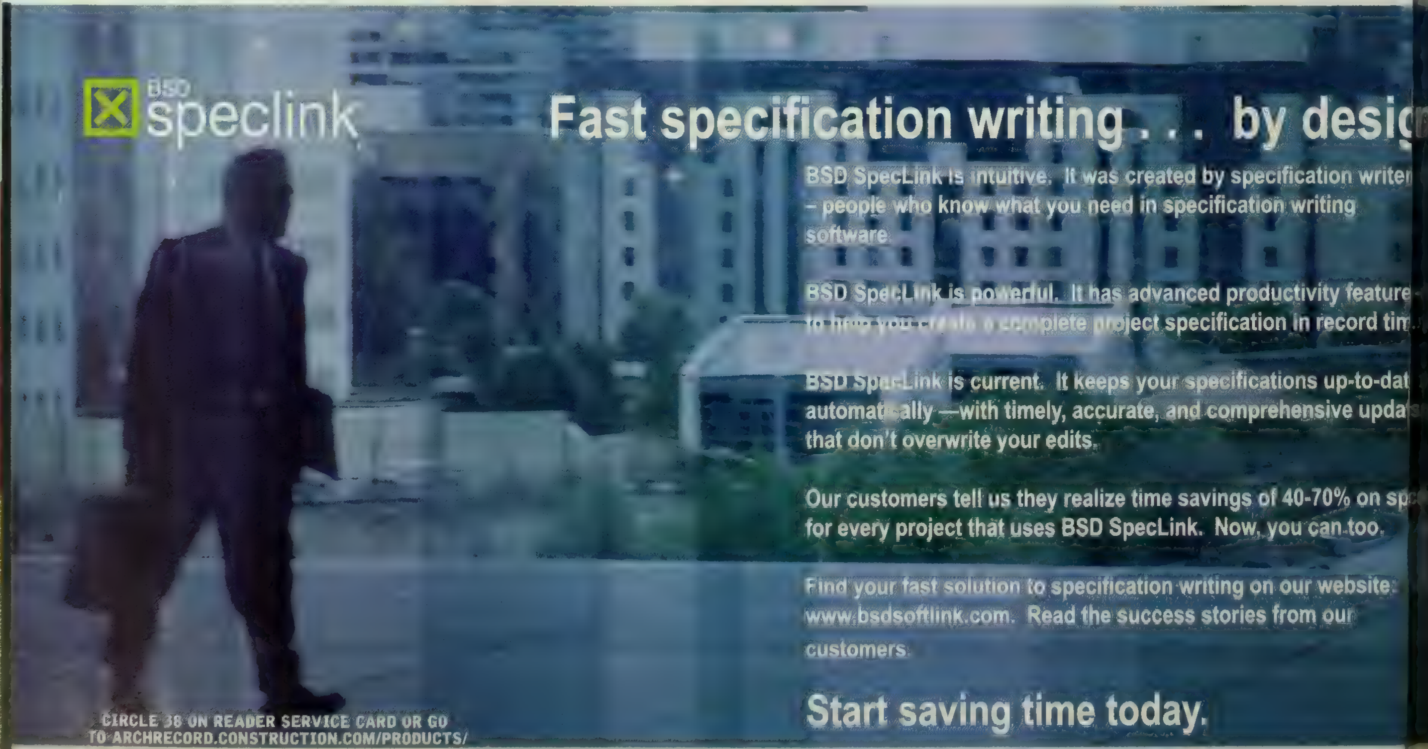
Hassan's Chocolate Factory outside Damascus is another atypical building. Its playful deconstructionist form and lush green setting are rare for a commercial structure anywhere—not just in Syria. Meanwhile, local architect Wael Samhouri's al-Hasani Religious Center in Damascus, which incorporates both traditional religious and modern office and educational space, is essentially a sleek tower block. Yet its carefully articulated fenestration gives its religious-cultural function away: It is too well detailed to be a typical urban structure, and too mindful of the past to be an average office building. By treating tradition as more than just an old pattern book, Samhouri's building shows that cultural awareness in architecture can mean something deeper than decorated monoliths.

Such originality is reminiscent of the creative, often carefree spirit of vernacular architecture here, which is less concerned with issues of style. In craggy hillside villages around Damascus, concrete pilotis jutting out of crevices support overhangs and large terraces, allowing them to hover over the valleys below. Roughly finished, and sometimes cheap looking, they're not likely to find their way into the hearts of the new yuppie class. But they're proof that there will always be creativity in Syria, and that old-style dynamism is still there.

Endorsing experiment

Nasser Rabbat, Syrian-born professor of architecture at MIT, sums up the struggle here to find a unique, affecting architecture. He blames political, economic, and societal isolation over the past half century for the lack of imagination in built work, and for the country's cultural stagnation in general. But he notes that "the onset of bland, consumerist, and ahistorical architecture in recent times has not totally eclipsed the age-old impulse to mix and match, although the creativity of earlier experiments has be mostly sapped from contemporary projects." He sums up, "A restoratio of civic society, even a modest one, is, in my opinion, the necessary precondition for any cultural and architectural revival."

A new architectural publicatio *Ebdaat* (Creativity), focuses on regional issues, like the work of prominent Arab architects, and the design principles of the old Damasc house. That's what Syria needs, an awakening that doesn't downplay t depth of its own, multilayered cultur yet one that transcends the restrict view of identity expressed through superficial nostalgia. Luckily, Syria i coming of age when environment and context are seen as paramoun and with millennial building traditio and spectacular landscapes, it's g a lot to work from. ■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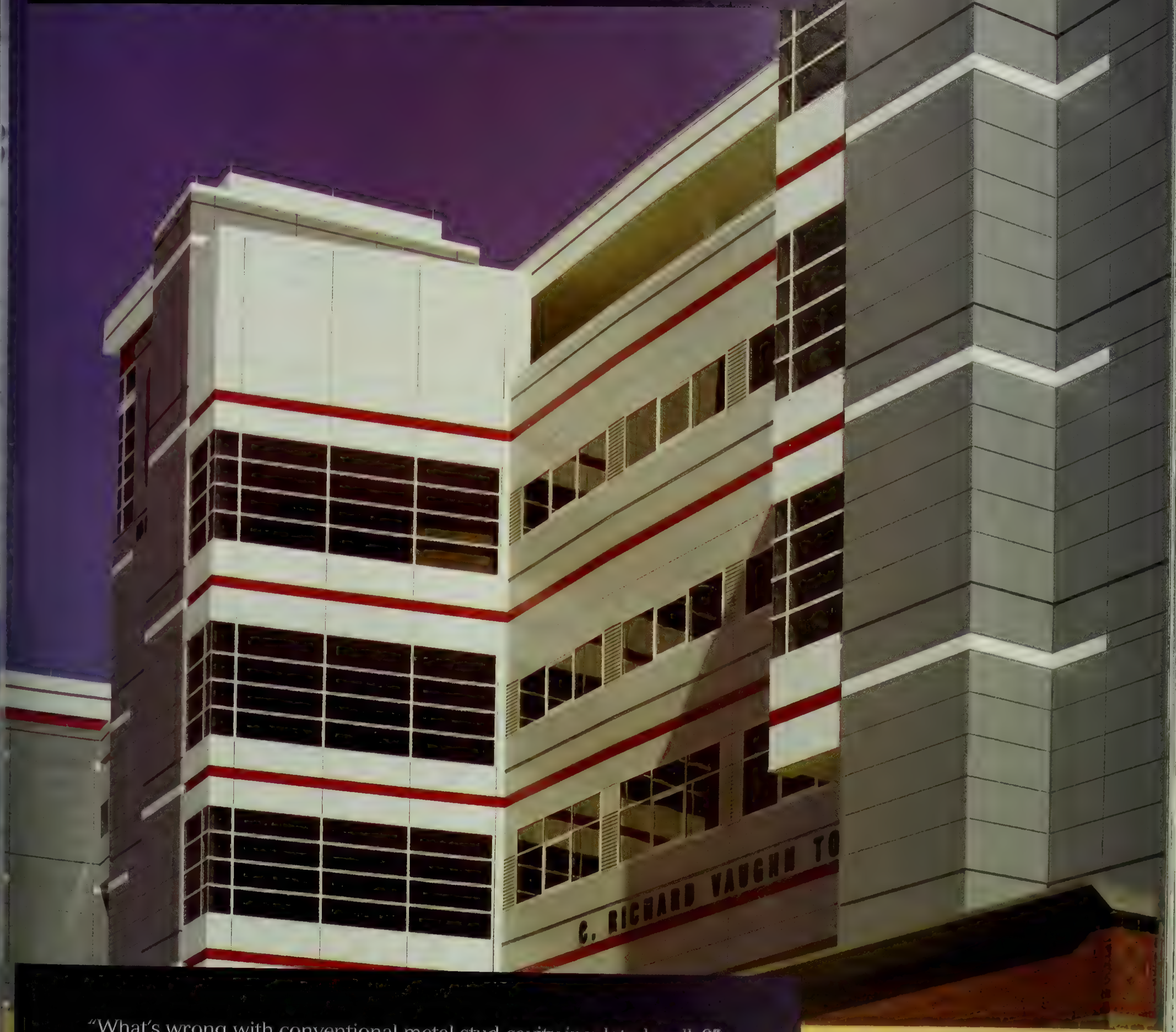

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Criticism today: chasing celebrities, globalization, and the Web

By Nancy Levinson

rchitecture criticism has devolved 'er recent years, from being coniousness-raising, progressive, ıd pleasurable to read—a stanırd that Ada Louise Huxtable ırked hard to define from the oment she became *The New York nes's* and the country's first fullne architecture critic over 40 ars ago—to being ad hominem, lebrity-obsessed, object-centric, d obtuse—a trail blazed by erbert Muschamp, who was the nes's architecture critic for 12 ars before retiring last year. Is it y wonder that no one—profesınal or lay reader—wants to read ticism anymore?"

With this rousingly unceremoıus take down, the editors of e *Architect's Newspaper*, Cathy ng Ho and William Menking, med their recent assessment of architectural-critical scene ıblished on November 16, 2005). ı might already have seen the ht-page, multivocal feature, ich mixed interviews with longablished newspaper critics ıs group—presumably exempt m the devolutionary drift—ludes Ada Louise Huxtable, Paul ldberger, Michael Sorkin, Robert mpbell, Deyan Sudjic, and the Allan Temko) and appraisals Joan Ockman, Marisa Bartolucci, l Vittorio Gregotti of various ntemporary newspaper and magazine critics. Skeptical readers might want to puzzle out the politics (gender, geographic, generational) that produced the particular selection of critics to consider. But overall, the section is a telling summary, and it hits a lot of the sensitive spots, including the fascination with fame ("chasing celebrities," in Huxtable's succinct dismissal) and the insidious effects of the brand-market mentality (or, as the irrepressible Sorkin says, "The majority of critics nowadays are simply flacks: There are too many fashionistas and too few street fighters.")

A digital revolution

Yet nowhere does this ambitious survey hit the most sensitive spot of all. Nowhere does anyone acknowledge the rise of the World Wide Web, the pervasive presence of the Internet, the digital revolution that is transforming journalistic practice and architecture culture. "Alas, there's no Lewis Mumford on the horizon," writes Bartolucci. Who would disagree? But of course, the real issue is not that there is no Lewis Mumford on the horizon; the real issue—the deeper issue—is that the socioeconomic and professional-cultural frameworks that supported his career—and those of the generation that followed—have weakened to the point of disintegration. Mumford began writing about architecture in the 1920s; Huxtable and Temko in the '50s; Goldberger, Campbell, and Sorkin in the '70s—in retrospect the twilight of a still-analog era when print was the unrivaled medium of intellectual life, when serious-minded dailies and periodicals could aim to guide the culture, to be "general interest," "large circulation," sometimes even "for-profit." For clearly, critical influence depends not only on the ability of the critic, but also on the presence of a large and ready readership. Mumford became hugely influential—Colin Rowe called him "an American Ruskin"—not just because of his capacious intellect and prodigious output, but also because in mid-20th-century America there existed something like a cohesive culture—a culture with discernible bounds and common touchstones, in which there flourished a lively journalism by public intellectuals, and a certain style of big-picture, ultraconfident criticism: Mumford on architecture, Clement Greenberg on art, Edmund Wilson on books, Susan Sontag on just about everything.

Lewis Mumford's big-picture culture no longer exists.

Retrenchment in the media

Today that cohesion has all but disappeared. For years now, the general-interest consensus has been fracturing apart, and not much of it has survived the rise of the decentralizing technologies of digital communication. "Architecture criticism has lost its place in public dialogue," worry the editors of *The Architect's Newspaper*, with reason. But where is that dialogue likely to occur? Many mainstream venues are now retrenching: Major newspapers scramble to survive (at *The Boston Globe*, for instance, several veteran arts reporters recently accepted the paper's buyout offer, leaving the culture desk depressingly depopulated), and intellectually weighty periodicals persevere, usually as nonprofits, official or de facto. (*Harper's* has long been underwritten by the MacArthur Foundation, for

ıtributing editor Nancy Levinson cofounding editor of Harvard *sign* Magazine *and currently tes the Web log "Pixel Points" for online* Arts Journal.

example, and for years the red ink of *The Atlantic* has been tolerated by its deep-pocketed businessman-owner David Bradley, and before him, Mort Zuckerman.) Meanwhile, fledgling new media are generating flabbergasting quantities of content, an ever-present online multiverse of image, information, text, and hypertext; and in this illimitable process they are also generating a newer, narrower definition of "public," or rather "publics," as broadcast slivers into narrowcast, and as the old-style, top-down discourse makes way for the looser, more participatory dynamics of online exchange. None of which is to assert anything as categorical as "the end of print," but rather to recognize that old and new media together will shape the future of design critique, and that this future won't look much like the past. As Kurt Andersen—whose polymathic career includes a stint as architecture critic for *Time*—argued recently in *New York* magazine: "Paper media today are … like sailing ships around 1860—still dominant but enjoying their last hurrah."

FLEDGLING NEW MEDIA ARE GENERATING FLABBERGASTING QUANTITIES OF CONTENT AND A NEWER, NARROWER DEFINITION OF "PUBLIC" OR "PUBLICS."

Impossibly global

The outlines of a multimedia architecture culture are still faint, but it's not too soon to discern one of the big challenges for criticism: The Web has made the culture unprecedentedly—amazingly and impossibly—global. Architecture has been international in outlook for years, but until recently this was mainly a matter of keeping up with the foreign journals and new monographs, attending lectures and exhibitions, and (sometimes even) traveling.

Today, this manageable world-view has exploded into a superabundance of instant-access globalism, at once exhilarating and exhausting. It's not that more architecture is being made around the world, it's that we are more aware of the architecture being made around the world. Years ago—back in the 20th century—you might have sprung for a subscription to *The Architectural Review* or *El Croquis* or *A+U* or *Baumeister,* and every few weeks the periodicals would appear and there'd be several dozen new projects to view. Now the pace is nowhere so leisurely; now you can boot up the laptop and click on *Archinect* or *Arch News Now* *butterpaper australasia* or *Desi* *Observer* or dutcharchitects.com to gloss through the first four letters of my alphabetized bookmarks—and navigate the endles interlinking and hyperlinking wor of omnibus portals, a virtual port lio of global design, the contents which are continuously expandin

You can see the dilemma f architecture criticism—at least a construed as a type of arts revie the weightiness of which hinges inevitably on the degree to whic the reviewer's experience is com prehensive. How can any individ critic gain comprehensive experience of a field whose boundaries have become so vast? The ambi tious literary critic can place an order for next-day delivery and stack a season's reading on the bookshelf; the movie critic can become an encyclopedic author on the basis of trips to the multi plex and a Netflix subscription. I disadvantageous contrast, the architecture critic is confronted w

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a multicontinental production that will defy any effort to achieve extensive knowledge. Just to remain au courant with the far-flung projects of the big-name firms would require tireless travel (not to mention an ample expense account), and it wouldn't leave much time to track the less-promoted work of young practitioners. How to choose what to review? How to define the critical beat?

Nowadays, the temptation is to pursue the global beat, which usually means the big-name beat—a natural temptation, for the global is glamorous. Yet the global beat tends to produce criticism that seems paradoxically slight, criticism that is noncontextual, episodic, and fragmentary, directed more to remarkable moments than to complex narratives, the kind of criticism that Ho and Menking describe as “celebrity-obsessed, object-centric.” But what if these characteristics say less about the talents of the critics than the limits of the genre? Herbert Muschamp was notorious for his loyalty to “a small coterie of avant-garde architects,” to quote Clay Risen in *The New York Observer*; but this might be understood also as tacit admission that there really is only so much that anyone can experience and assimilate.

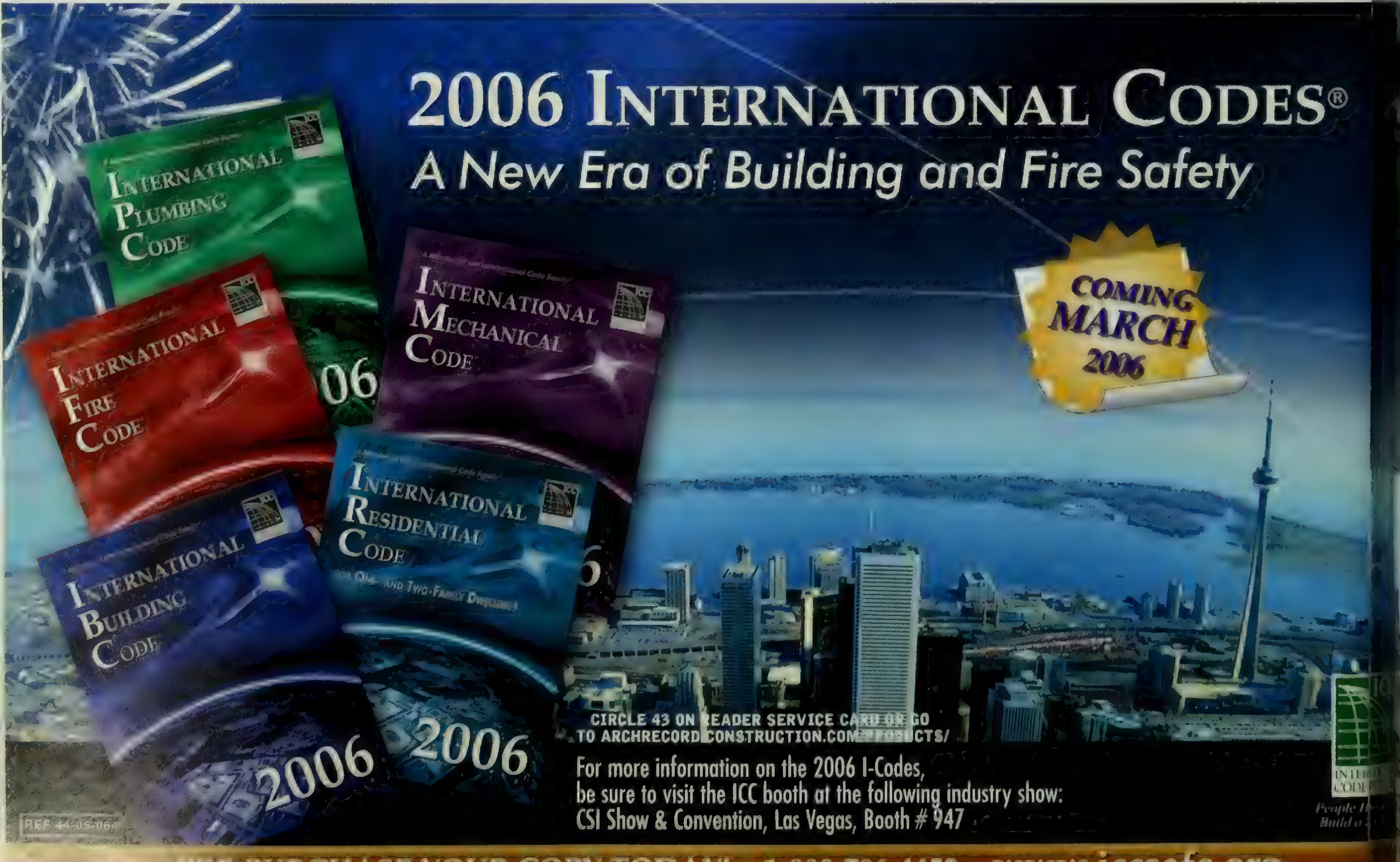
THE ARCHITECTURE CRITIC IS CONFRONTED WITH A MULTICONTINENTAL PRODUCTION THAT WILL DEFY ANY EFFORT TO ACHIEVE EXTENSIVE KNOWLEDGE.

So here we might consider that much of the criticism that now seems so exemplary was largely local, that writers like Mumford and Huxtable hit their critical strides as keen and close observers of the New York scene. Mumford, who wrote the “Skyline” column for *The New Yorker* from the early ’30s until the early ’60s, was both a champion of progressive architecture and a five-borough populist, covering not just major projects like Rockefeller Center and the ’39 World's Fair, but also cheap lunchrooms, shop windows, neighborhood playgrounds, and public housing. In the ’60s and ’70s, Huxtable eloquently advocated for High Modern design and historic preservation, but she was especially expert at teasing out the intricacies of bureaucratic planning and real estate financing, the politics and money that were transforming the fine-grained prewar metropolis into the world capital of what she called “death by development.”

Rethinking assumptions

The multiplatformed and micromarketed media culture now emerging will not offer the sort o widely visible journalistic venues enjoyed by Mumford and Huxtabl But it might encourage—or compel—an imaginative rethinking o the assumptions of design critiqu It might encourage, too, a vigorou and broad-based network of critic willing to come creatively to grips with the experiential limits of glob architecture—willing, that is, to forego the jetlagged internationa ism of celebrity culture for a deeper and more nuanced know edge of the everyday landscape of the local. ■

Editor's note: *Robert Campbell and Michael Sorkin will each writ Critique four times a year, and the other four months it will be writte by a rotating group of new voices.*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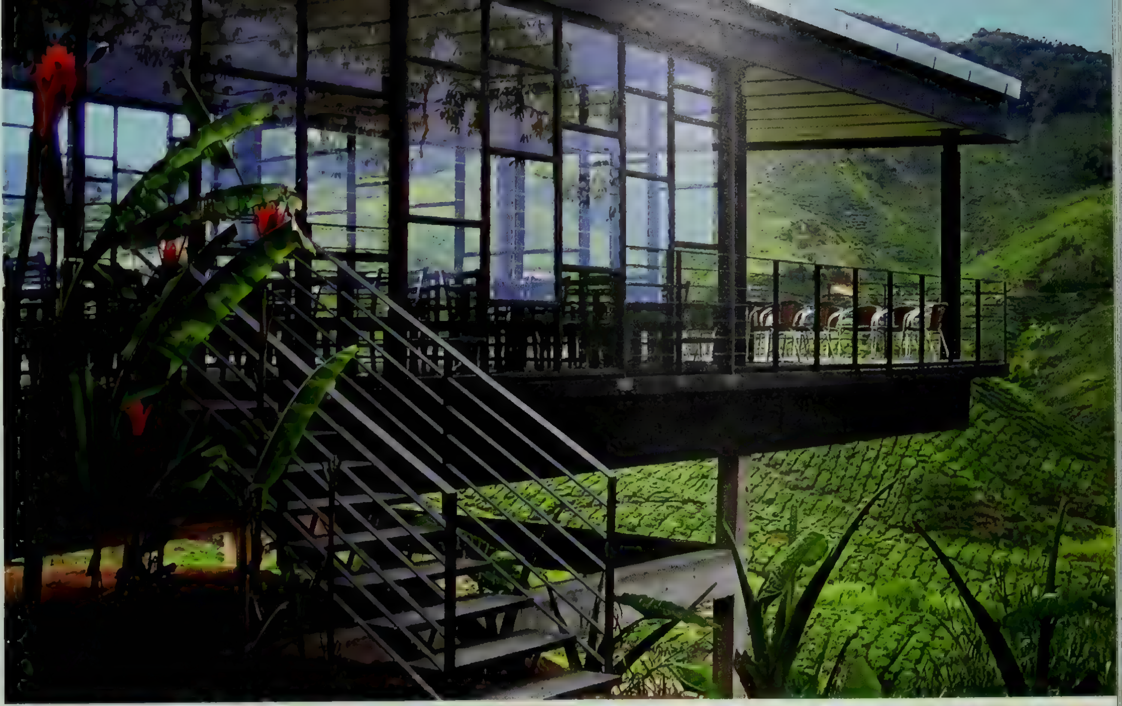
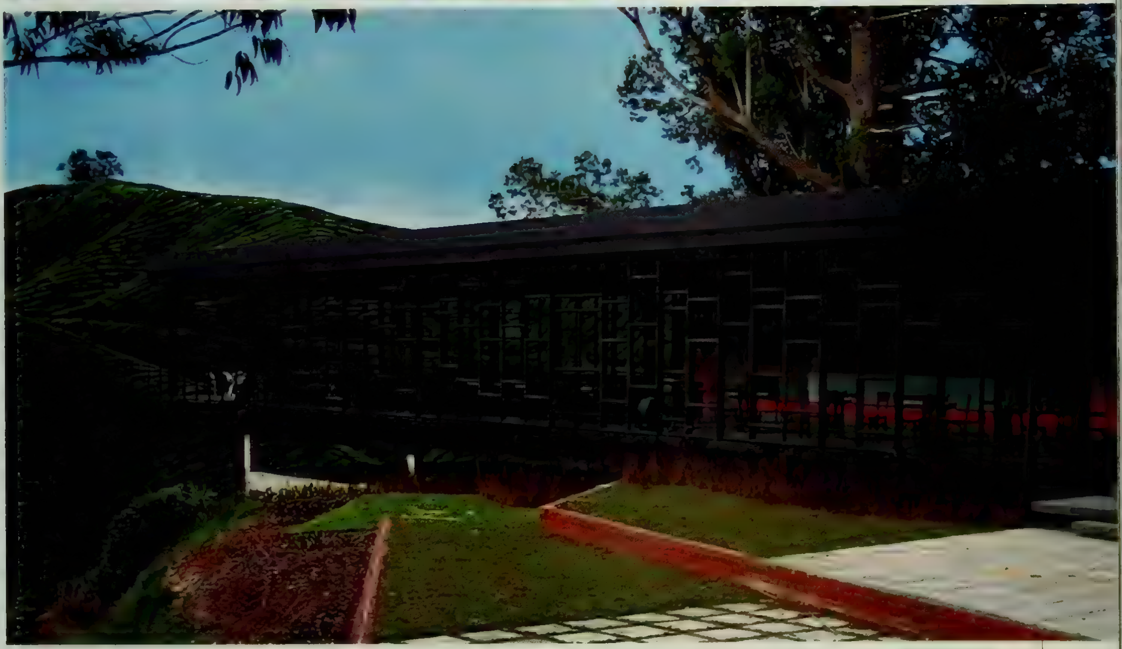
Snapshot





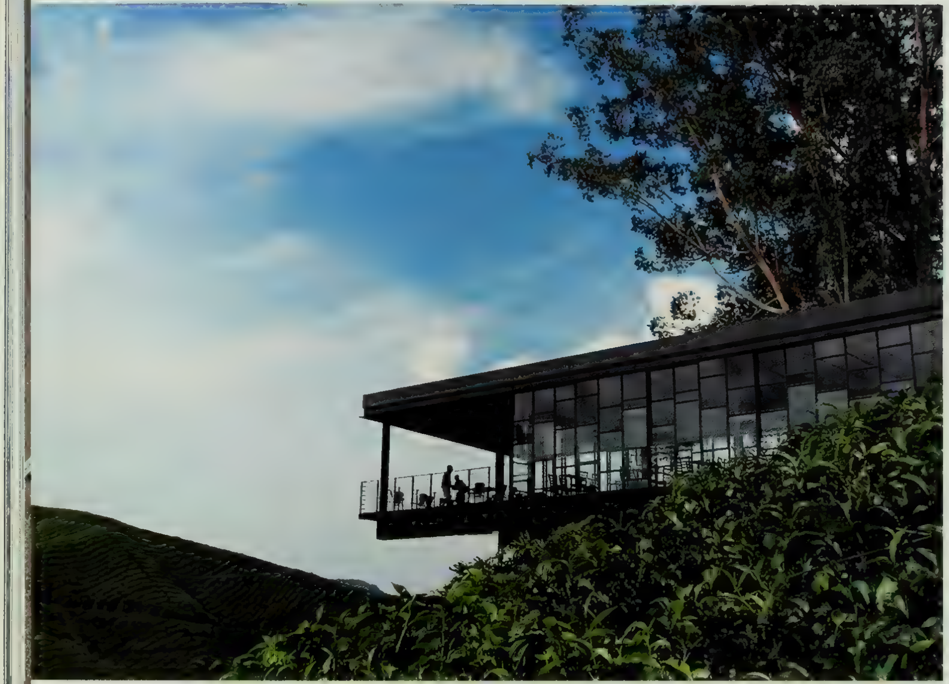
Beth Broome

Taking the tea ceremony to dizzying new heights

stled in the Cameron Highlands, three hours outside of Kuala Lumpur, BOH Tea Centre welcomes tourists and day-trippers to this Malaysian purveyor's lush estate. The country's leading grower, BOH pioneered laysia's first highland plantation and has made its home in the region ce the company was established in 1929.

In an attempt to improve circulation and enlarge and update the facilities to attract more tourism to the ntation, BOH brought in Kuala Lumpur–based architects ZLG Design. The program called for a building that uld provide a new home for the existing teahouse and serve as a conduit, guiding visitors through a retail p and exhibition space to a pick-up area where a tour of the nearby factory begins. Furthermore, the com- y stipulated, the new building had to be linked to the existing factory and facilities while remaining respectful he natural landscape.

Elevated so that it has a minimal impact on the site's contour, the steel structure incorporates cutouts to



The center's restaurant and terrace are cantilevered over the plantation's sea of tea bushes (left and prior page). Indigenous building materials, such as bamboo (bottom) and thin-cut logs (below) help anchor the building in the landscape.

accommodate existing trees. Naturally ventilated, and with ample daylight penetration, the center needs little artificial lighting and cooling. Visitors enter the facility via a ramp that deposits them at the enclosed food and beverage area. The restaurant and its cantilevered balcony, with their breathtaking views of the valley, make for a dramatic arrival. Four-hundred-sixty-five feet long and 30 feet wide, the floor plan functions as a floating pathway that shepherds visitors through the building, offering ample glimpses of the lush plantation below. "For circulation purposes," says project architect Susanne Zeidler, "this was the logical approach." Ancillary facilities, such as the kitchen and toilets, are expressed as cubes that punctuate the long rectangle of the main building.

All building materials were procured locally, with most sourced from the Cameron Highlands region. Randomly arranged steel frames that form the facade feature glass louvers in the enclosed restaurant and shop areas, while the rest of the building functions as a breezeway. Open to the outside, the covered walkway's walls are partially screened by 4-inch-thick cross sections of logs found on the estate. Throughout, bamboo is used for the ceiling and as both a cladding and fencing material. A nod to one of BOH's old Cameron Highland factories, which is sheathed in perforated zinc, ZLG used the same material for the building's roof and sections of its facade.

In the BOH Tea Centre, ZLG has created a dynamic building that, hovering over its almost spiritual backdrop, lends a Modern note to this historic region and the ancient drink associated with it. ■

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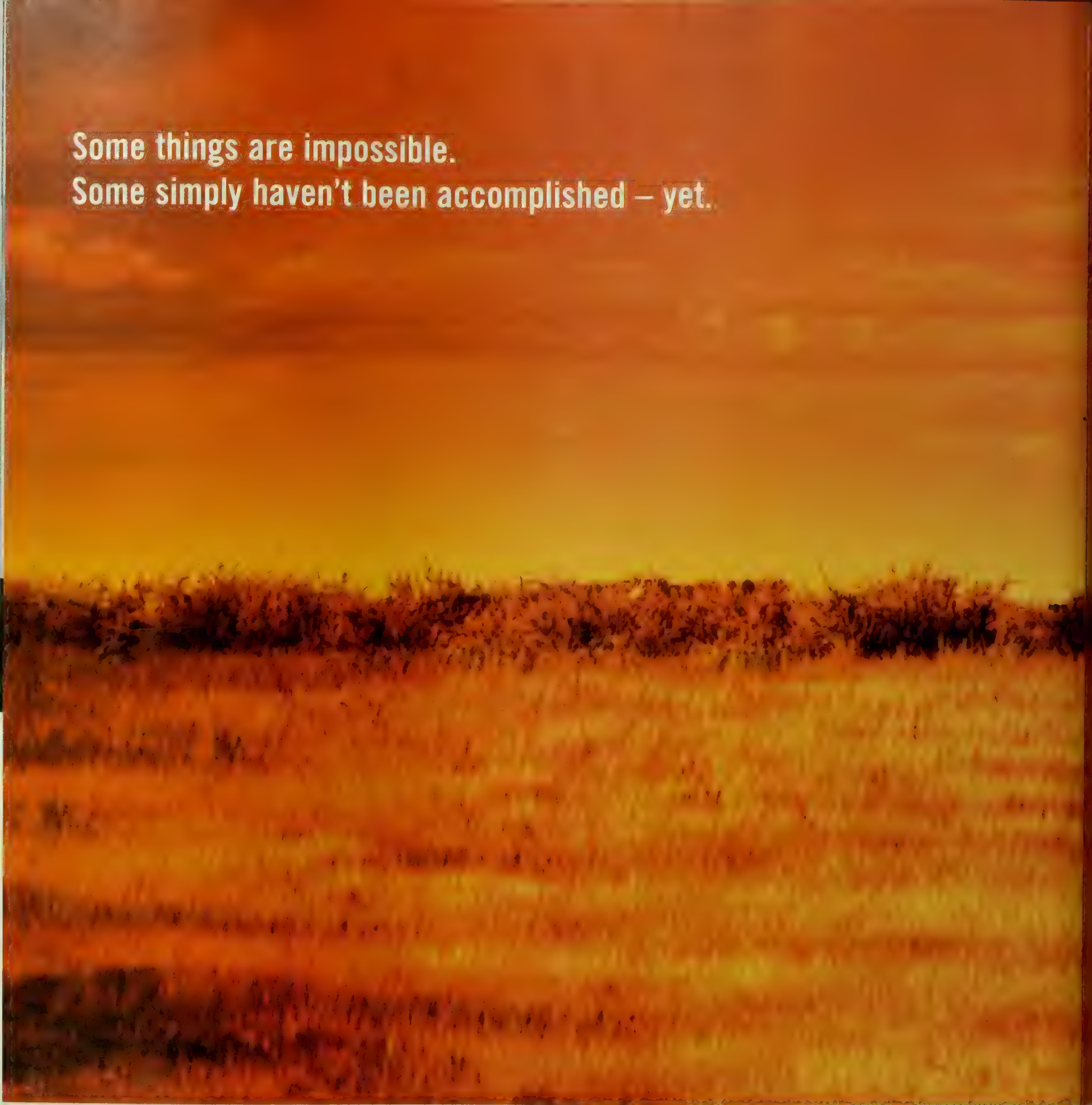
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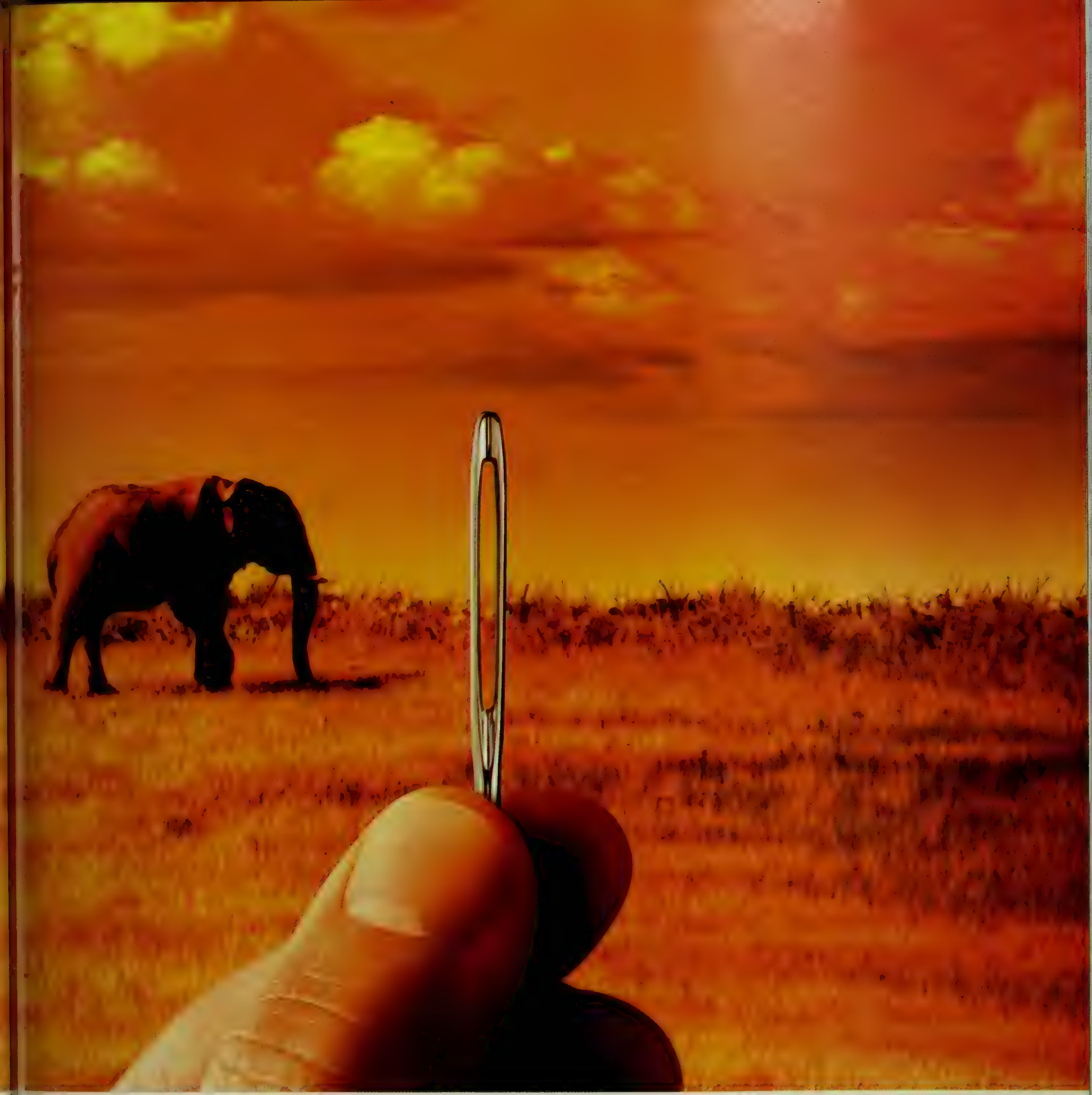

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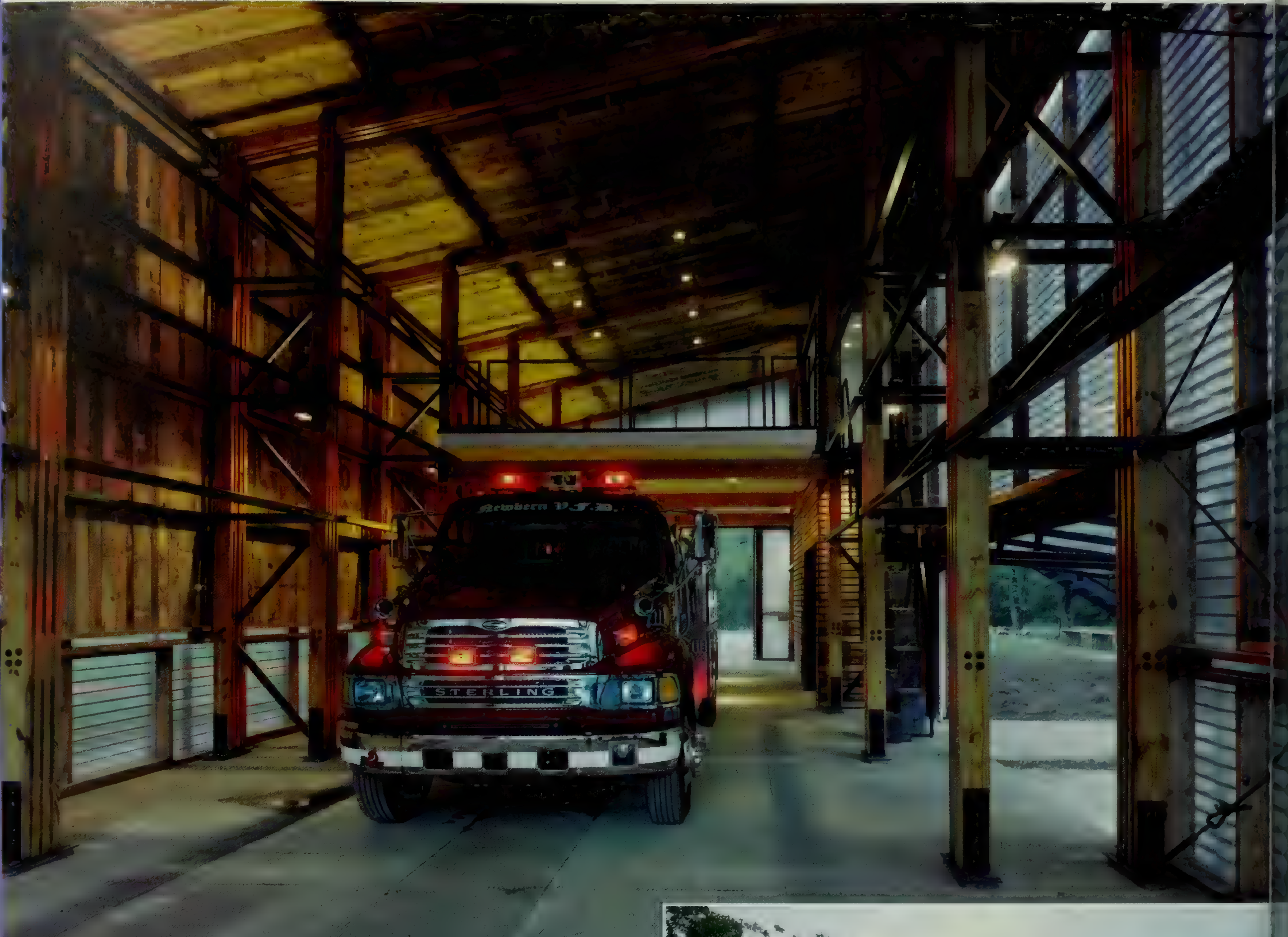


Fire station, Newbern, Alabama: More sophisticated in terms of its material palette and architectural expression than earlier projects by the Rural Studio, this building points to some of the changes being made at the school under Andrew Freear. The station doubles as a city hall and a venue for community events.

Keeping the Spirit Alive by Moving Ahead

Four years after Mockbee's death, the Rural Studio has a new group of buildings to show off

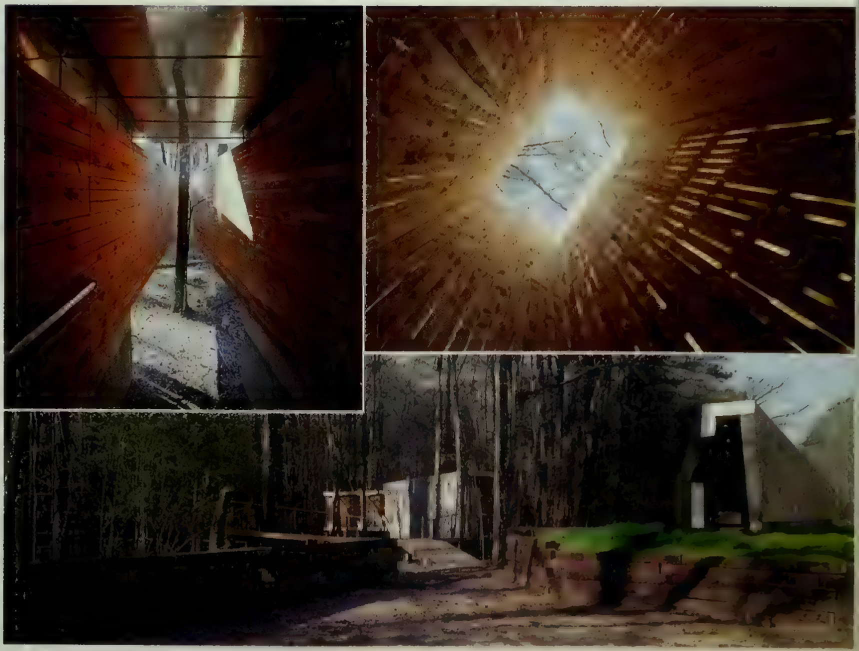
By Andrea Oppenheimer Dean

Fourteen years ago, Samuel (Sambo) Mockbee, a larger-than-life, sixth-generation Mississippian, set out for dirt-poor Hale County, Alabama, with a handful of Auburn University architecture students, hoping to jump-start the reform of architectural education and architecture's priorities. Instead of theory, he offered his students at the Rural Studio hands-on learning, helping them design and build "warm, dry, and noble" houses—often of ecycled, salvaged, and curious materials—for poor, primarily African-American residents. Mockbee lamented that most architects had become "house pets to the rich." He wanted to nstill in students what he called "a moral sense of service to he community" and challenge "the status quo into making esponsible environmental and social changes." His buildings and classes conveyed his belief that worthwhile architecture has a moral ingredient and "is interwoven with a particular culure—with people and place."

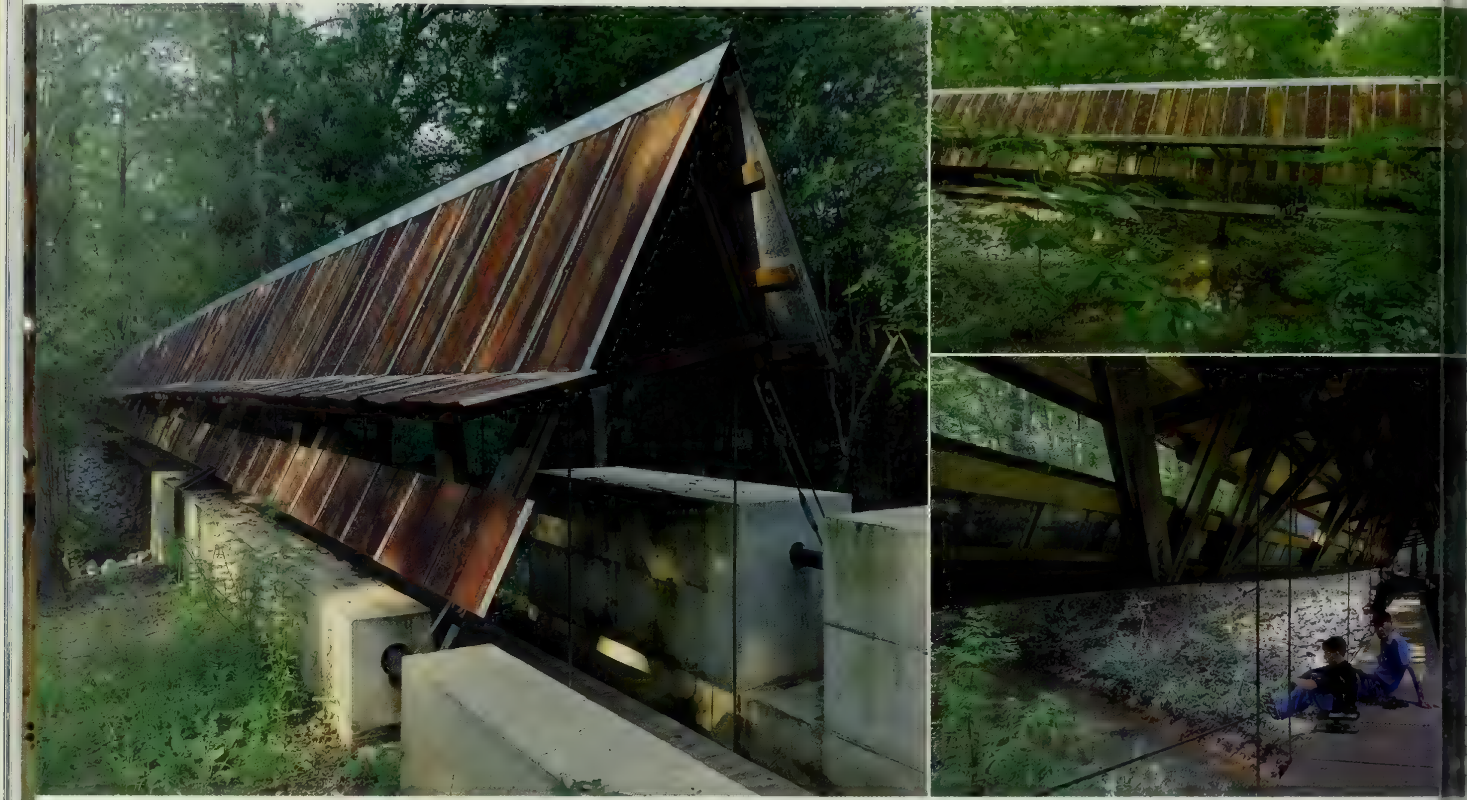
Mockbee died of leukemia at age 57 in late 2001. Three years later, he was awarded the AIA Gold Medal for his work at the Rural Studio. By then, Andrew Freear, whom Mockbee had hired in 2000 to teach fifth-year students, had assumed the studio's helm, with codirector Bruce Lindsey, head of Auburn's architecture department. Freear, a gonzo spirit with a disciplined mind and a sophisticated aesthetic, is a product of Yorkshire, England, and of London's Architectural Association. He quickly shepherded 17 widespread projects to completion.

Once those frenetic days were over, the Rural Studio became "less Heineken, more professionalism," says architect Steve Badanes, a frequent consultant to the studio and cofounder of the design-build firm Jersey Devil. In part, the studio's evolution is a reflection of Freear's intensity and love of teaching. Mockbee, who returned home to Canton, Mississippi, every weekend, was the studio's easygoing spirit. For Freear, the studio is all-consuming, and he has insisted on continuing teaching fifth-year and graduate-level outreach students, many of whom come from other universities. Like Mockbee, he lets students discover solutions for themselves, regarding himself "as their co-conspirator and partner." His main job, he says, is to ensure that students ask the right questions. His involvement with fifth-year projects is one reason the studio's focus has shifted from the individ-

Contributing editor Andrea Oppenheimer Dean is the author of Proceed and Be Bold: Rural Studio After Samuel Mockbee (Princeton Architectural Press, 2005) with Timothy Hursley.



Toilets, Perry Lakes Park, Perry County, Alabama: Part of a multiyear project to fix up the park, each of these three toilets offers a different view—either up or out or toward a lone tree.



Bridge, Perry Lakes Park, Perry County, Alabama: This 140-foot-long metal-and-cypress-covered bridge crosses a swampy lake and provides pedestrian access east side of the park. Engineered by Robert McGlohn, the bridge has three triangular horizontal trusses and end sections stabilized by cables anchored in conc

ual house (second-year students together build one a year) to community buildings, the province of thesis students who usually take on three each year.

There have been other changes. "One of the great things about Sambo," Freear says, "was his ability to move on. I think he'd be proud that the studio hasn't become stale."

The newly completed fire station in Newbern, the Rural Studio's home, showcases some characteristics of the post-Mockbee studio. You notice a shift of aesthetic: Sophistication has replaced quirkiness, and off-the-shelf materials have replaced scrappy ones. Standing on Main Street across from G.B.'s store, the post office, and a rusty hay barn the students use as a studio, the fire station is an elegant, 21st-century iteration of a barn. It is clad in pine and translucent polycarbonate, with south-facing horizontal cedar slats to provide shade in summer and admit low winter light. The interior is dominated by an exposed structure of steel-and-timber wall trusses stretched taut by heavy-gauge steel cables and metal anchors.

Because the fire station is structurally complex, Freear explains, it couldn't be as experimental as in the early days. "You had to have an engineer involved," he says. "You had to be grown-up." Further, because it was to double as a city hall and a venue for community events, the building underwent careful programming, an aspect of the Mockbee era that was sometimes less than rigorous. "We live in a very poor plac Freear says, "so it's our responsibility to stretch our resour and shoot for zero-maintenance structures." One result is t the studio's material palette has narrowed.

Learning from buildings, not books

There's a lot of cedar and galvanized aluminum sidi "silver-colored things that don't need paint," he quips. "Sam didn't have a chance to learn from early projects falling to b but we have to fix them, and we learn from them and use th as teaching tools. We don't have many books, but we h about 60 buildings. How do we do a gutter? A roof? An ea What's successful? Is it working well thermally? We have a c alog of buildings to learn from." He adds that the studio become serious about its legacy. "We're landlords now. want to set an example."

Freear has tried, above all, to raise the level of cr For him, that means an increased emphasis on drawing, computer or by hand. Drawings, he insists, allow design tea to communicate better among themselves, build faster, a convey ideas better to clients. He spends hours listening to s dents rehearse their client presentations, conveyed in langu anyone can understand. Such presentations are "a mu missed part of our educational system," he says.

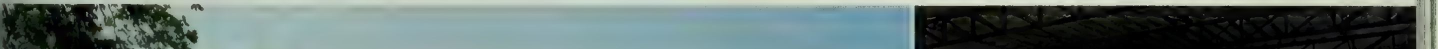
Of late, the studio has been criticized for overru ning schedules, which forces students to remain in Newbern months after graduating. A suggested solution is that Auburn work out a master's degree. Meanwhile, leftover students, as they're called, soak up Freear's time and Auburn's resources. That was the case with the fire station. For one thing, the studio had to wait for donated timber to be delivered, on the donor's schedule rather than the builder's. Freear says projects would progress faster if he participated more actively in the design process, but then, he says, the students would learn less and be less invested in their work.

The studio now tackles multiyear, phased projects for the first time. An aluminum-and-cedar pavilion marked the beginning of one such project: the renovation of Perry Lakes Park, in Perry County, Hale County's neighbor to the west, in 2002. The next academic year, students added three unusual toilets, each with a different view. The cantilevered "long toilet," as it's called, is clad in stainless and cedar and focuses on a single tree. The "tall toilet" rises 40 feet and is open to the sky, and the square "mound toilet" has a horizontal slit-opening. In 2005, students completed a 140-foot-long metal-and-cypress-covered bridge that spans a bayoulike ake and makes the park's beautiful east side accessible by foot. The bridge's structure, planned with help from structural engineer Robert McGlohn, is composed of three Toblerone-shaped horizontal trusses. The end sections, sandwiching a central portion whose load is light, are cantilevered, stabilized with heavy cables, and anchored onshore in concrete. A team of students, newly certified in aerial construction, is recreating a 100-foot-high metal bird-watching tower. Another team is finishing a cedar walkway edging the lake.

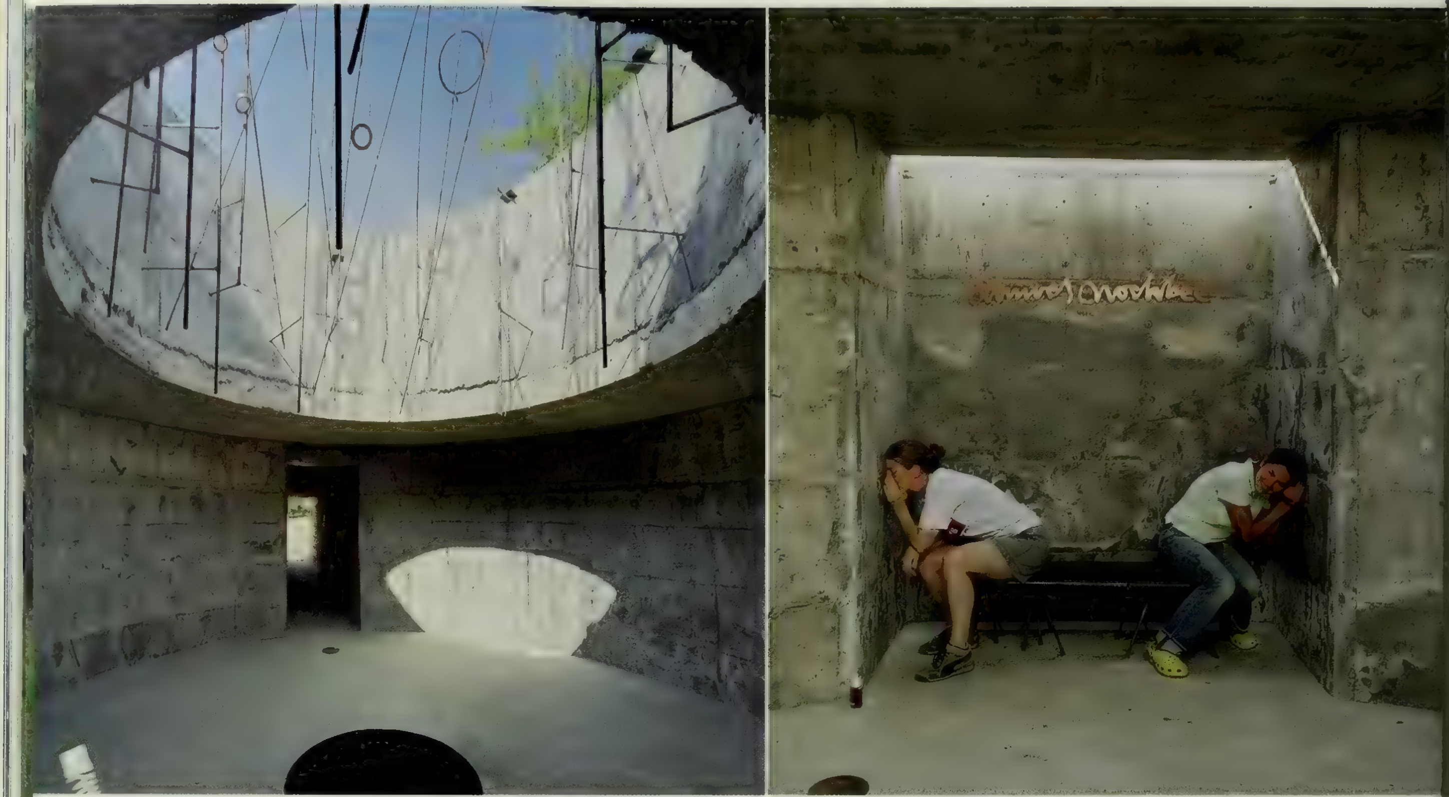
TODAY THE RURAL STUDIO IS "LESS HEINEKEN AND MORE PROFESSIONALISM," SAYS STEVE BADANES.

The renovation and expansion of the Rural Heritage Center in Thomaston, about 20 miles south of Newbern, marks another Rural Studio watershed, if only because of the building's size (6,000 square feet) and complexity. Many projects originate from queries by Freear to communities about buildings they need and would be willing to invest in. "If their money's in it and they need it and want it, they'll spend time and energy to raise more money," he says. "Then we put our name alongside the community's for grants." But some projects just present themselves, as did the Rural Heritage Center, with a $190,000 grant from HUD. Freear couldn't resist.

The existing building was a 1950s ugly duckling, originally used for vocational education. The studio spent the better part of the project's first year tearing down walls, sandblasting surfaces, and replacing windows. The students inserted a glass box for office and display space, the unconditioned area between the glass insert and the exterior wall serving as a climate buffer. The students also added a new building entrance, a director's office facing the street, a glass-walled café that will spill outdoors in warm weather, exterior cedar cladding, and a 100-foot-high identifying sign of perforated metal on vertical trusses. In front of the sign is an



Heritage Center, Thomaston, Alabama: The Rural Studio took an existing 1950s building, renovated it, and expanded it to create this new facility. A 100-foot-gn made of perforated metal set on vertical trusses gives the building a civic presence and backdrop for an outdoor performance space.



Subrosa Pantheon, Newbern, Alabama: A memorial to Mockbee, designed from his sketches by his daughter Carol, this structure features a meditation space enter from a tunnel and roses growing on rods above it (above left). Carol and her sister Sarah Ann whisper to each other by way of a hidden sound tube (above right).

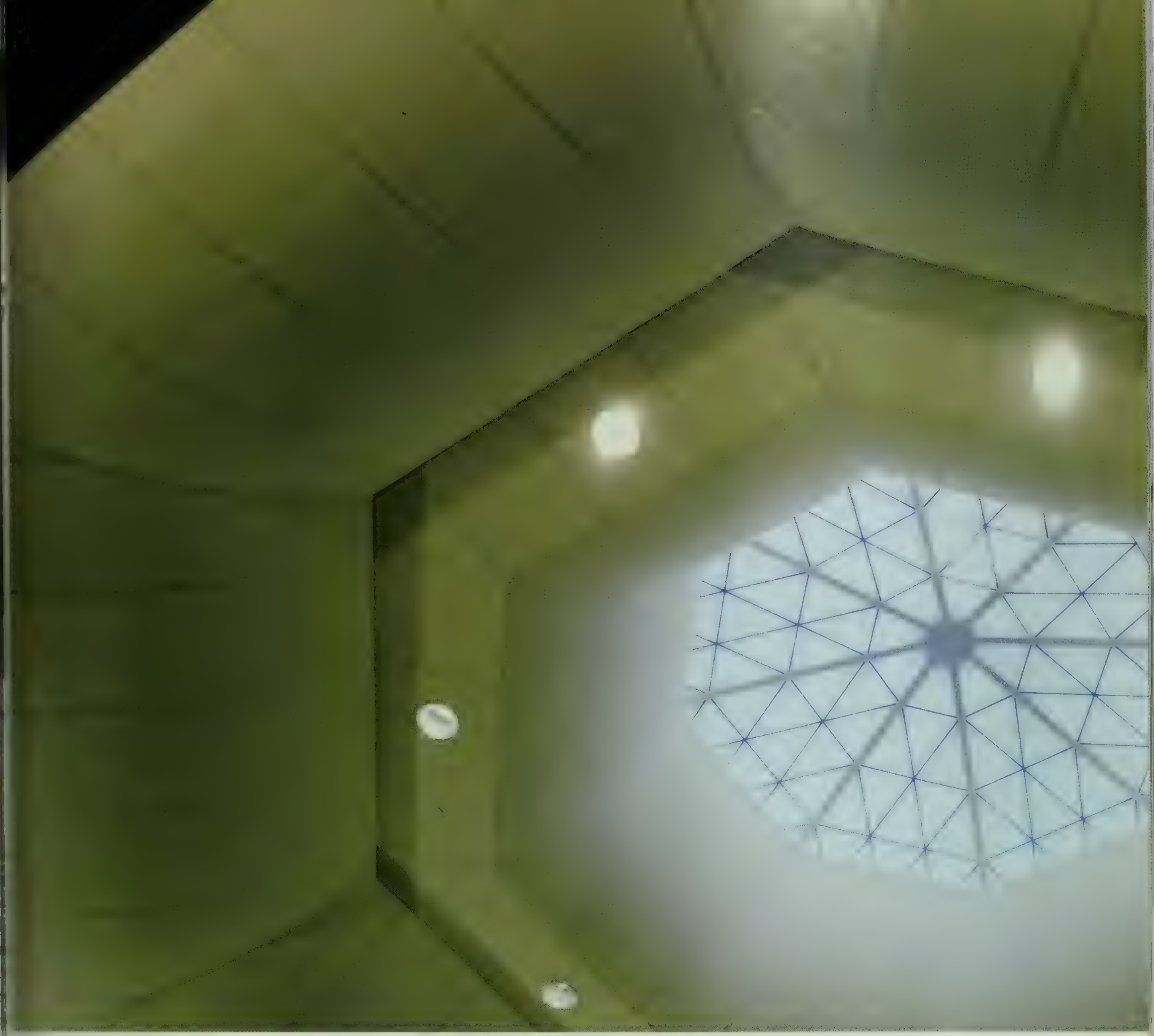
outdoor performance space, where the local theater group staged *Steel Magnolias* last spring.

Not that the studio has abandoned the individual house. Second-year students recently completed a cedar-clad dwelling resembling a flat-roofed mountain cabin raised on piers, because it's in a flood plain. Frank Flury, the second-year instructor under whom the house was designed and built, likens it to a double-wide trailer with porches. The studio's most recent effort to create an alternative to the trailer, the region's most prevalent housing type, is "the $20,0 house," designed last year by a group of outreach studen Another such group is at work on a second iteration wit wraparound porch.

Frank's House, Masons Bend, Alabama: Second-year students still design and build houses; this one recalls a double-wide trailer.

Most moving is the recently completed Subro Pantheon, a memorial to Mockbee designed from h sketches by his daughter Carol. You descend through a na row tunnel that Carol calls "a fat-man's squeeze" into a rou meditation space, where secrets can be revealed under t roses—subrosa. The little building is replete with Mockb symbology: Turtles, dear to his heart, paddle in a round po from which rise metal rods in the form of beaver stic beloved by Mockbee, his daughter explains, as the work nature's architects. Roses will climb the metal rods, which topped by orbs framing the constellations on the longest d of year. Carol wants to explain what it all means by writi about it on Subrosa's walls.

As for the Rural Studio's future, Freear rattles of list of new projects: reconfiguring a 40-acre park Greensborough, the Hale County seat; building a dog pou in Greensborough; creating a courtyard for the county hos- tal in the town. "Fourteen years ago, this was a bunch students with a bushy-bearded professor who the locals thought was loony," Freear says, "and now we're mainstrea and everyone wants a bit of what we do." ■



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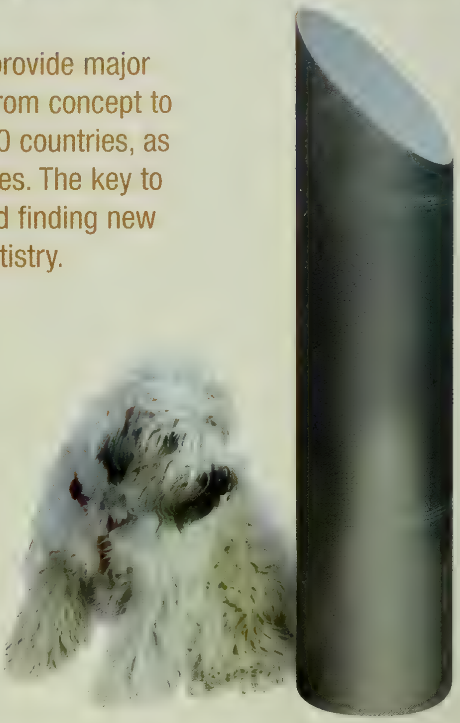

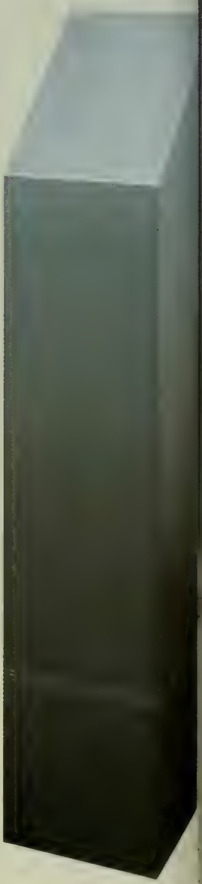

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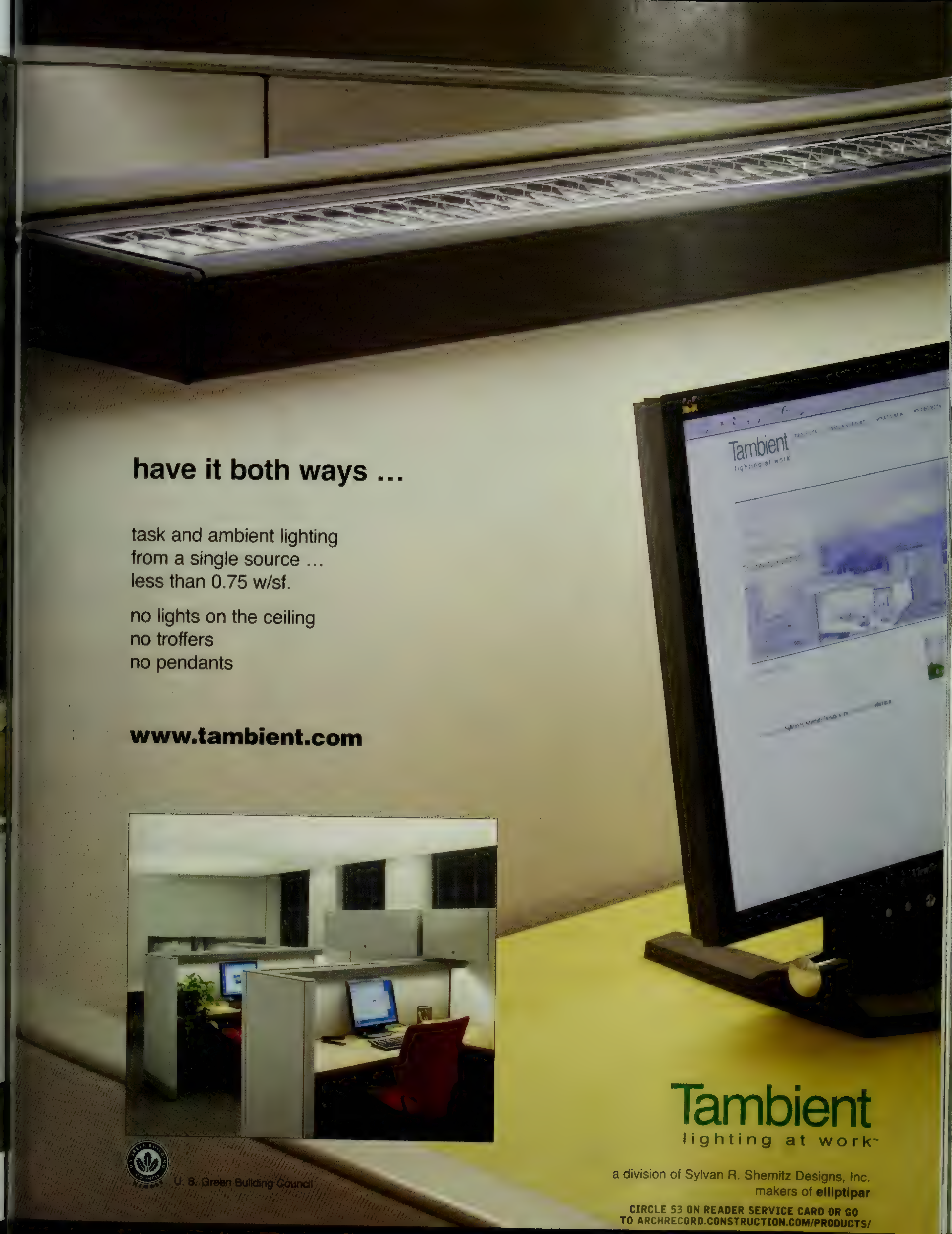

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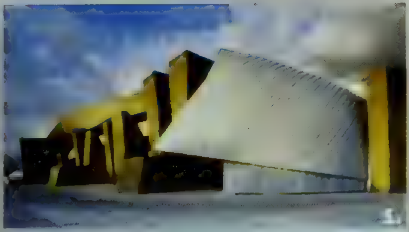
Suiting the site: custom fit for Way Out There

By Robert Ivy, FAIA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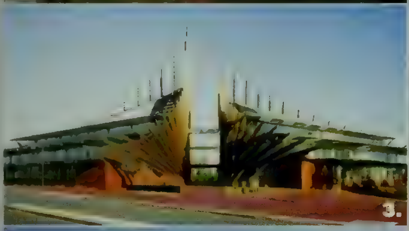
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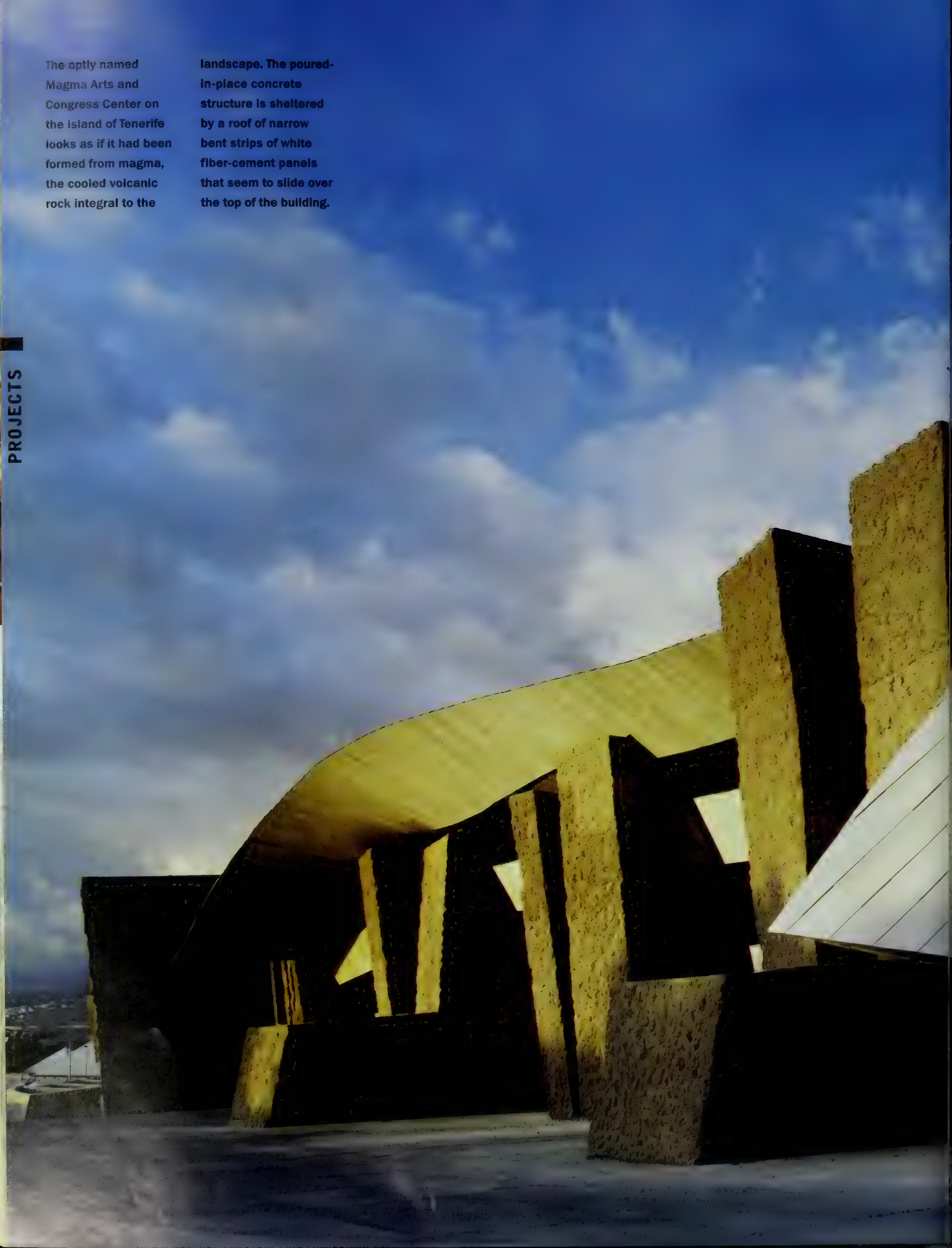
1. Magma Arts and Congress Center
2. Red Location Museum
3. New Chancellery Building and Business School
4. Svalbard Research Centre
5. Parliament Library

PHOTOGRAPHY: © ROLAND HALBE (1); DAVID SOUTHWOOD (2); JOHN GOLLINGS (3); NILS PETTER DAHLE (4); RAJ REWAL ASSOCIATES (5)

Few features of ARCHITECTURAL RECORD have struck a nerve as tellingly as the one published in February 2001. Entitled "Out There," it showcased the work of a diverse group of American architects who chose to exercise their design talents outside the centers of fashion—namely, New York and Los Angeles. Spanning a broad age range and based in both the city and countryside, the featured architects seemed united in a firm determination to fulfill their visions by finding sources of inspiration and willing clients, wherever they might be. Rooted in the local landscape, topography, and culture, in the end the work could have occurred in no other place.

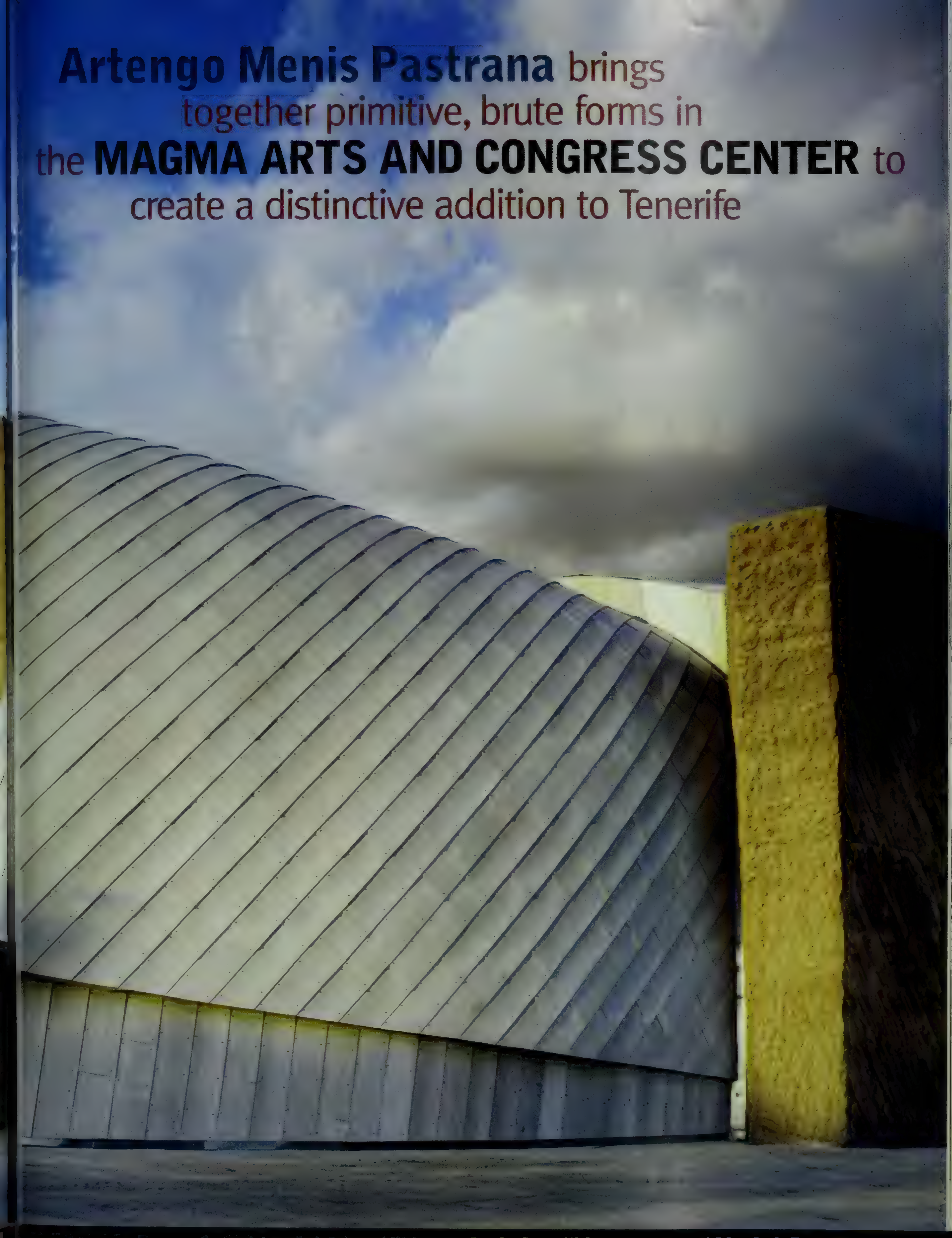
You have asked us for more. In the intervening five years, RECORD has scoured beyond the 50 states, canvassing the globe for work that thrives on specific locale. In this issue, we internationalize the effort, looking far outside London or Milan or Shanghai, hence the title, "Way Out There." We hesitate to characterize the following projects as a school, since the work varies in levels of abstraction or response to site. Rather, we suggest that the projects presented here point to a world where architectural motives are fully expressed in unexpected places, and that work in South Africa or Norway's outer reaches can inspire designs in the mega cities.

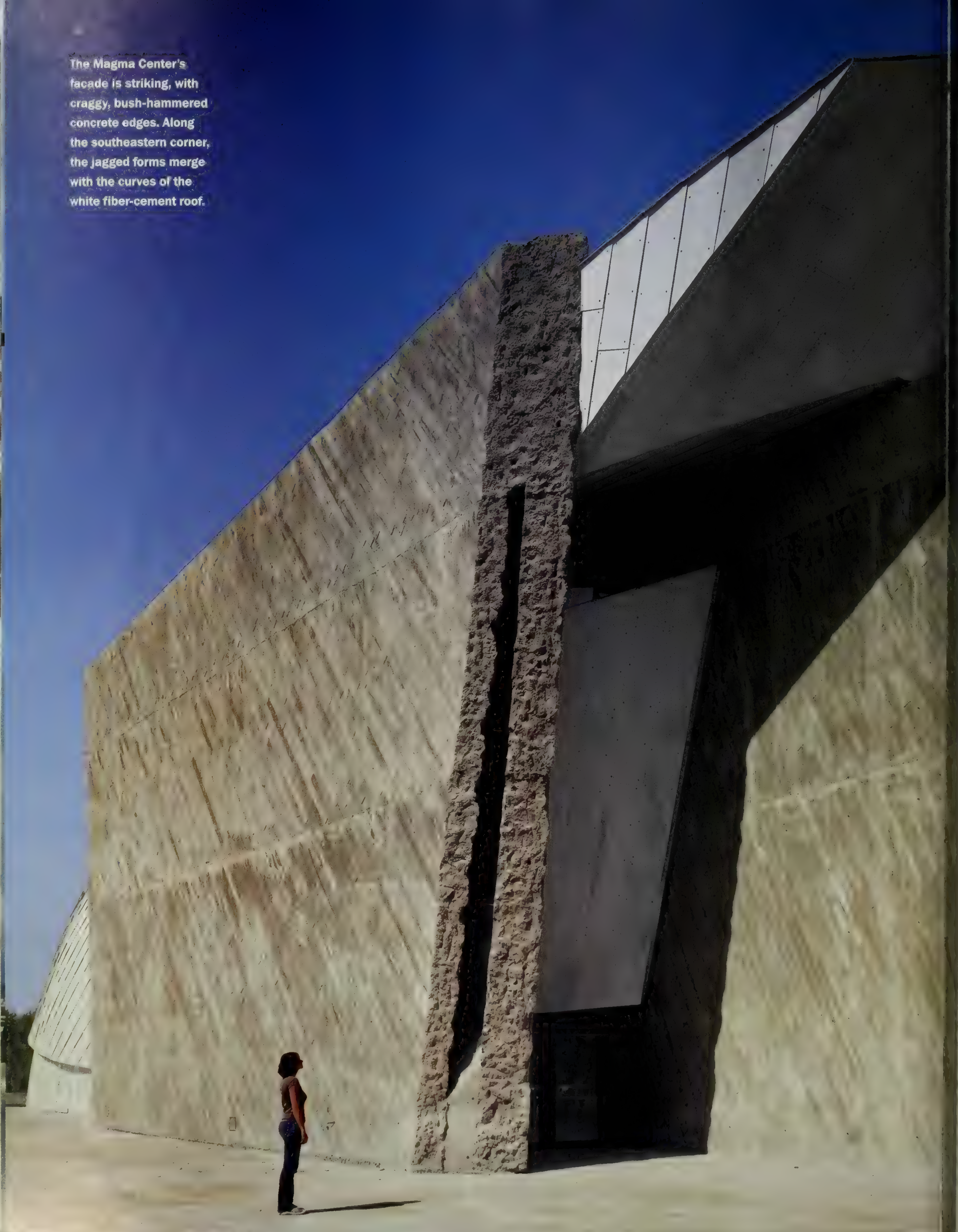
Travel with us via these buildings chosen from down the road and around the globe. It's a big world, way out there.



The aptly named Magma Arts and Congress Center on the island of Tenerife looks as if it had been formed from magma, the cooled volcanic rock integral to the landscape. **The poured-in-place concrete structure is sheltered by a roof of narrow bent strips of white fiber-cement panels that seem to slide over the top of the building.**

Artengo Menis Pastrana brings together primitive, brute forms in the **MAGMA ARTS AND CONGRESS CENTER** to create a distinctive addition to Tenerife





The Magma Center's facade is striking, with craggy, bush-hammered concrete edges. Along the southeastern corner, the jagged forms merge with the curves of the white fiber-cement roof.

By David Cohn

The volcanic crater at the heart of the island of Tenerife is often cited by Fernando Menis, until recently of the firm Artengo Menis Pastrana Arquitectos (AMP), as a "visible force" that informs the boldly expressive design of the Magma Arts and Congress Center in the town of Adeje. Designed nine years ago by AMP nd largely overseen by Menis, who has now opened his own practice, the Magma Center shares the forceful character of AMP'S first major project, he Presidency Building in Tenerife's capital of Santa Cruz [RECORD, March 001, page 100].

It could be argued that the recently opened center, where irregular, ush-hammered concrete volumes gather in a rough precinct under a bil-owing white roof, also evokes Le Corbusier's neoprimitive, sculptural rchitecture at Chandigarh, or even the monoliths of Stonehenge. While xhibiting compositional sophistication and a thorough study of program-atic requirements, the work finds expressive potential in the rough creative ux and effort of the poured construction process, somewhat analogous to e conversion of molten lava into stone in the surrounding landscape.

During the grueling building process, Menis worked with a mall group of professionals and a tightly knit construction team, using to dvantage the island's relatively low labor costs. Other challenges, such as mited access to imported technologies and a tight budget—the final cost as $36 million for the 240,000-square-foot facility—led to many ingen-ous, hands-on solutions, such as the thin strips of fiber-cement panel to lad the elaborate roof structure of steel trusses and beams.

The Magma Center is one of the first important public buildings n the recently developed southern half of the island, 45 miles from Santa ruz, in an area dedicated almost exclusively to tourism. Although initially lanned as a convention center, facilities for theater and concerts were dded midway through the design, including a fully equipped fly tower. he facility is publicly financed and operated through a private concession.

To prepare for the commission, the architects adapted the merican model of a single, raw, multifunctional space for convention enters rather than breaking the facility into the separate elements of a xed-seat auditorium, an exhibition hall, and a meeting center, as is com-on in Spain. Menis comments, "European congress centers are completely orseted, while you can have a bicycle race in an American hall."

Magma's column-free, 30,000-square-foot main hall can be ivided into up to nine separate rooms of different sizes, and uses movable latforms to assemble raked seating and different stages. The building's pper floor accommodates up to 26 smaller meeting rooms. But the archi-cts sought to distance their design from the "impersonal, shoe box" aces of American convention halls, and made a point of including win-ows and clerestory natural lighting in the interiors.

The building rises on the inland edge of current coastal develop-ent, 100 feet above the sea, on a platform excavated from the island's steep

avid Cohn is RECORD's international correspondent based in Madrid.

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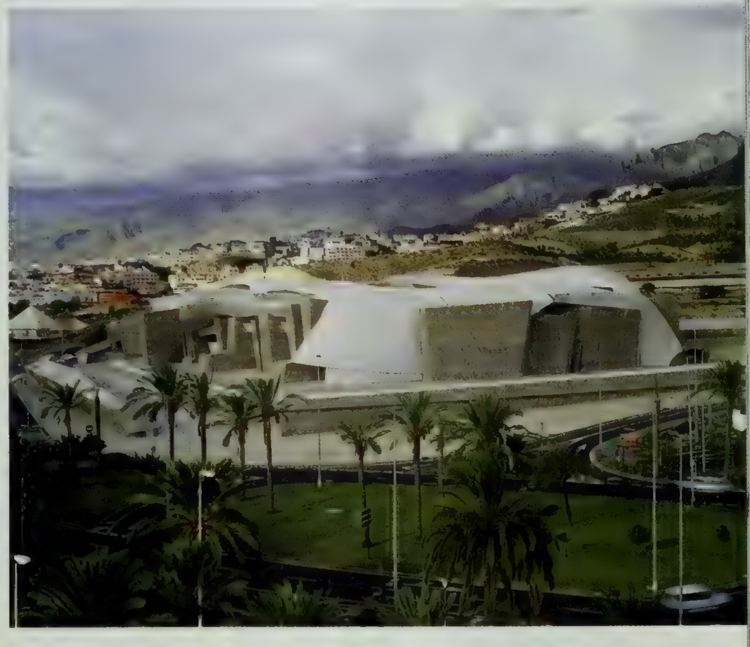
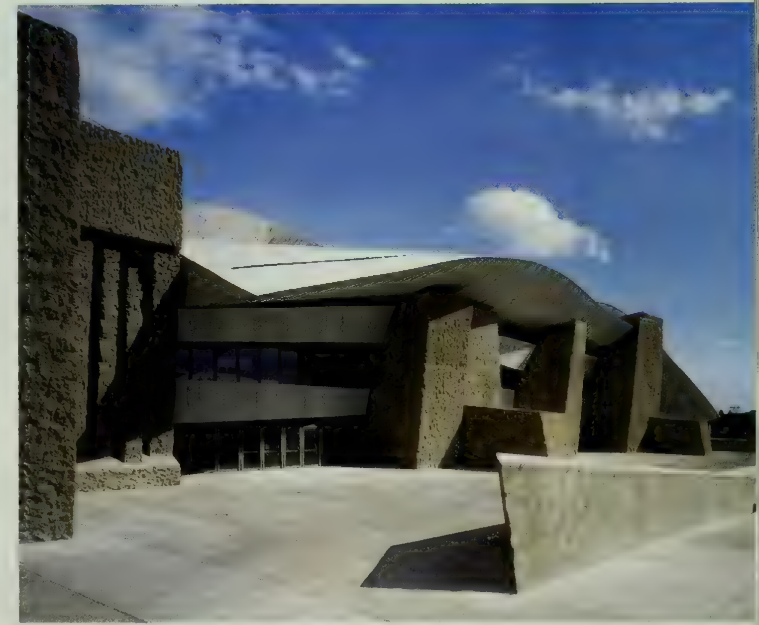
oject: *Magma Arts and Congress nter, Adeje, Tenerife, Canary lands, Spain*

chitects: *Artengo Menis Pastrana MP) Arquitectos—Fernando enis, principal in charge of project; lipe Artengo, Jose Maria Pastrana, incipals; Esther Ceballos, Andreas eighnacht, Ana Salinas, assistant architects; Fernando Merino, project manager*

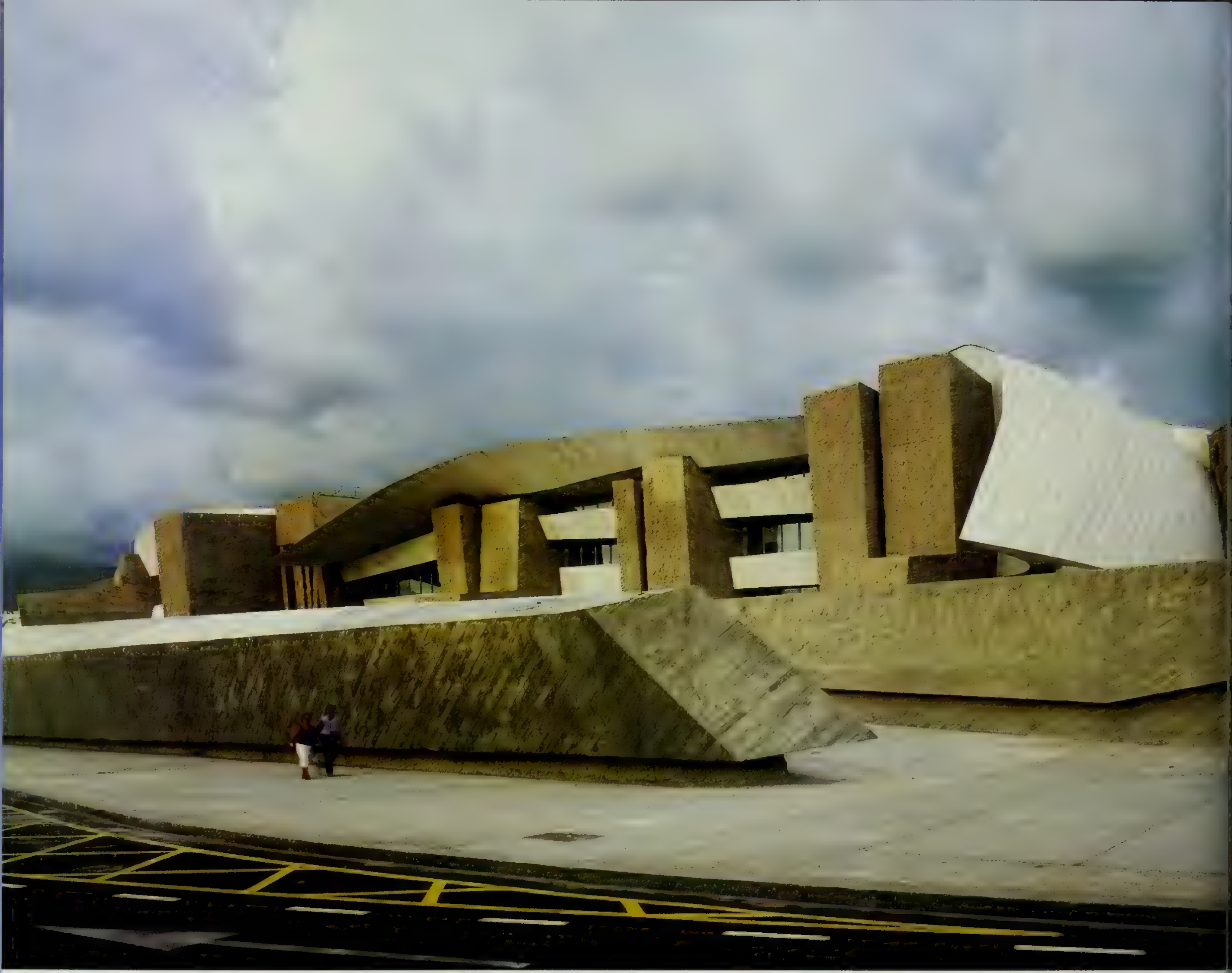
Engineers: *Victor Martinez Segovia (structural); Juan José Gallardo (structural, exterior spaces); Antonio Carrion, Pedro Cerda (acoustical); Milian Associates (mechanical)*

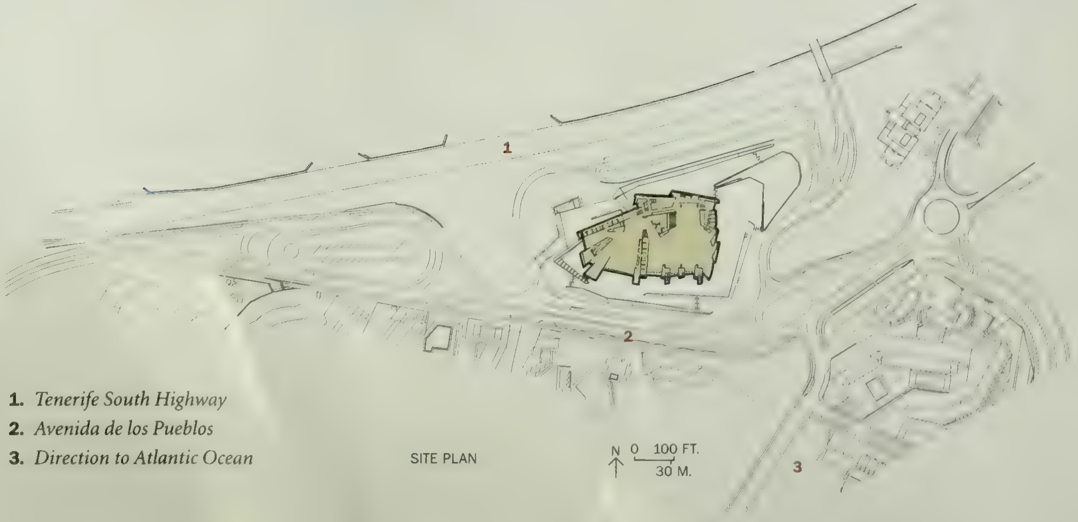
Consultants: *Andrés Pedreño, Rafael Hernández (construction)*





The massive sculptural forms of concrete are mixed with *chasnera*, a compressed volcanic ash. The complex contrasts dramatically with the town of Adeje, as seen when the center is approached from the southeast (top), and from the main entrance forecourt on the southwest (above).

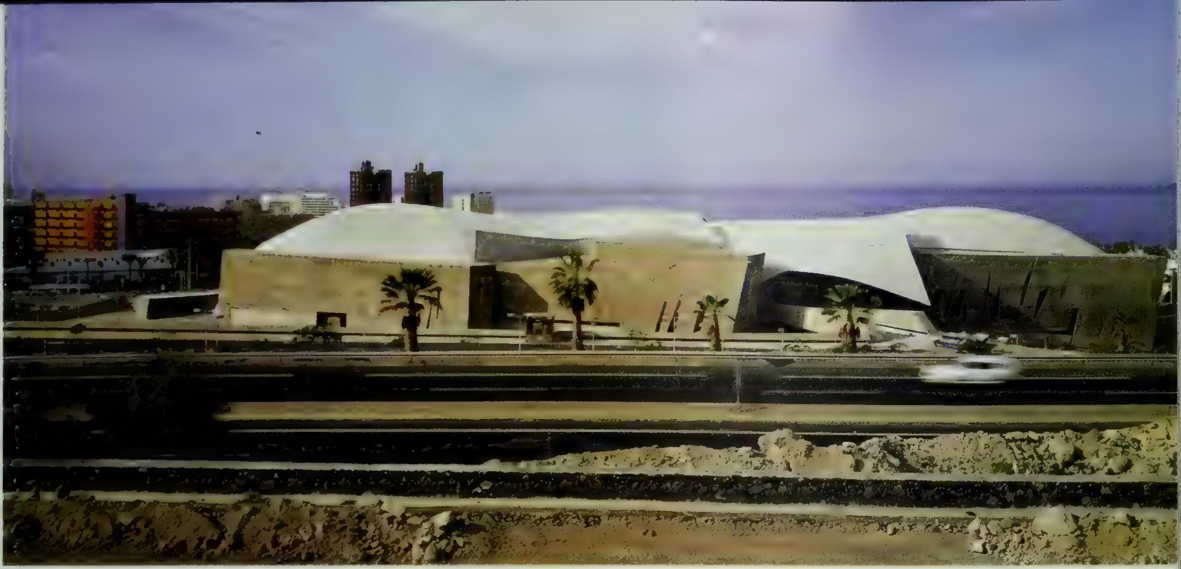




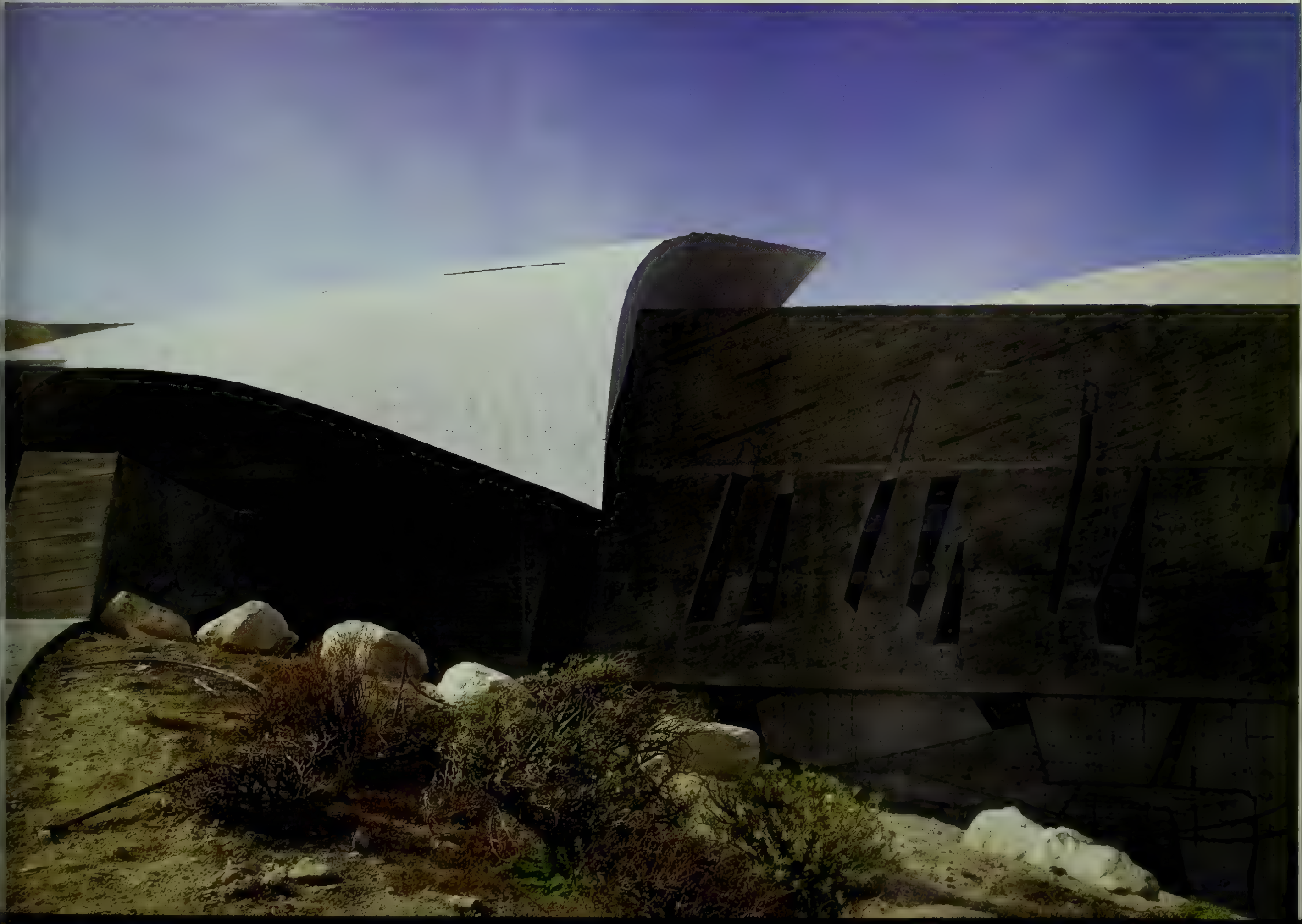
1. *Tenerife South Highway*
2. *Avenida de los Pueblos*
3. *Direction to Atlantic Ocean*

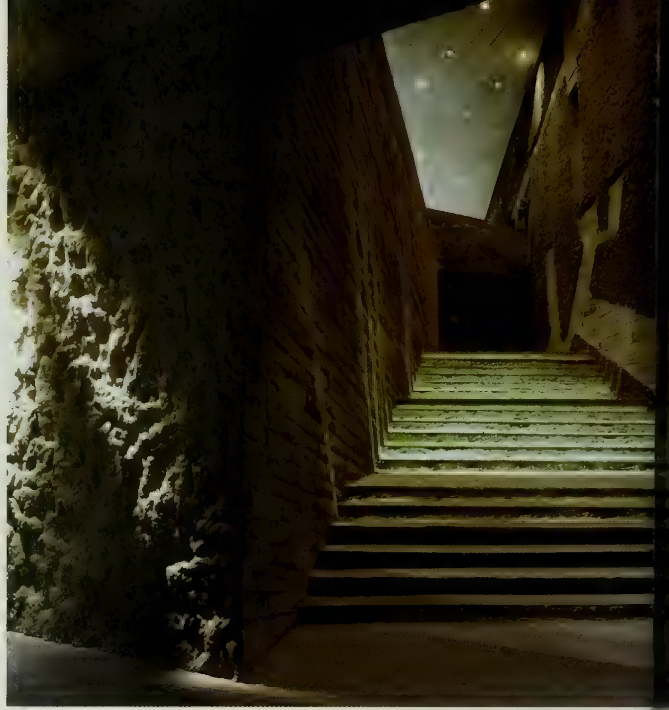
SITE PLAN

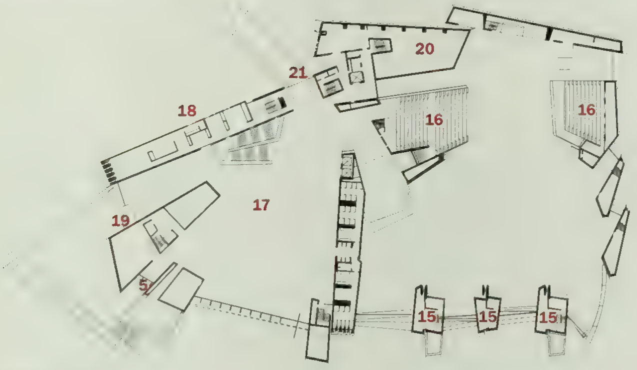
The 240,000-square-foot Magma Center occupies a 7-acre site 45 miles from Santa Cruz. The area, known as Costa Adeje, in southern Tenerife, has been developed for tourism in recent decades. Retaining walls of poured concrete guide visitors to the forecourt of the building (above), where they may enter the hall.



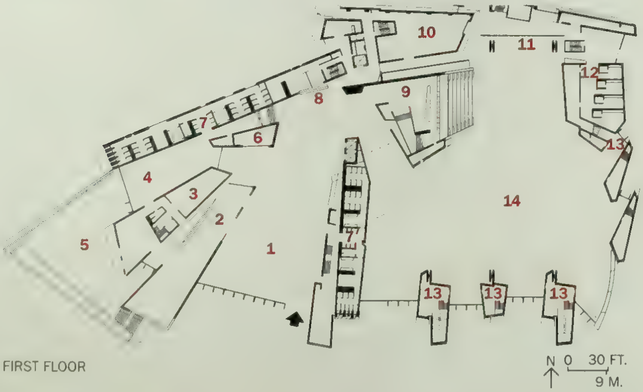
At the rear (northeast side) of the center, the concrete walls create solid bulwarks jutting out toward the busy Tenerife South Highway (above). Fernando Menis carved angular slots for windows in the thick walls that enclose the back-of-the-house functions. A bridge (below) extending from the upper level acts as a secondary entrance on the sloping site. In the distance is the Atlantic Ocean.







SECOND FLOOR



FIRST FLOOR

1. *Lobby*
2. *Café*
3. *Kitchen*
4. *Restaurant*
5. *Terraces*
6. *Shop*
7. *Bathrooms*
8. *Reception*
9. *Coatroom*
10. *Storage*
11. *Stage*
12. *Dressing room*
13. *Wardrobe*
14. *Main hall*
15. *Light control*
16. *Grandstand seating*
17. *Top hall*
18. *Offices*
19. *Press office*
20. *Technical*
21. *Secondary entrance*

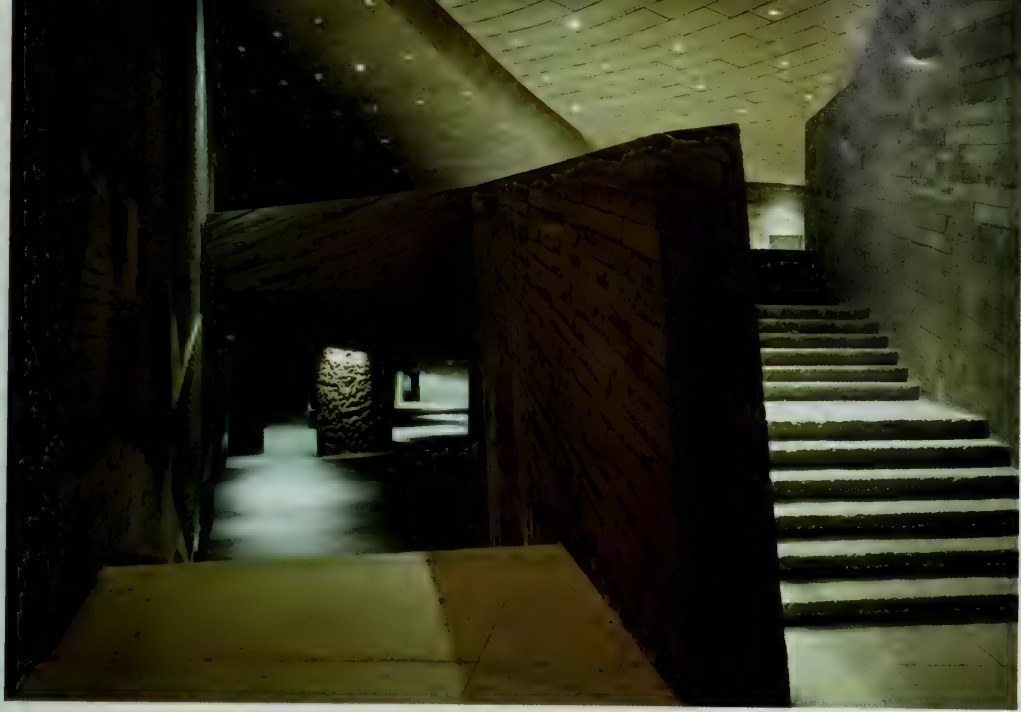
slopes. Its principal structural elements are twelve concrete piers (some a
small buildings in their own right, such as the administrative bloc
arranged around the interior spaces in a roughly rectangular configurati
alternating with sections of glass or fiber-cement-panel infill, their angl
planes providing vivid chiaroscuro effects under the high subtropical su

The concrete was mixed on-site with an aggregate of *chasnera*
sandy-colored compressed volcanic ash that blends with the exposed v
canic terrain of the surroundings. The piers support the wavy roof, whi
sags over the narrow ends of the building like a spongy pillow or ov
flowing custard, and the seemingly semicollapsed lines of the spandre
With its rough-cut, unflashed edges, the fiber-cement roof offers a soft
weightless variation on the concrete's rich textures.

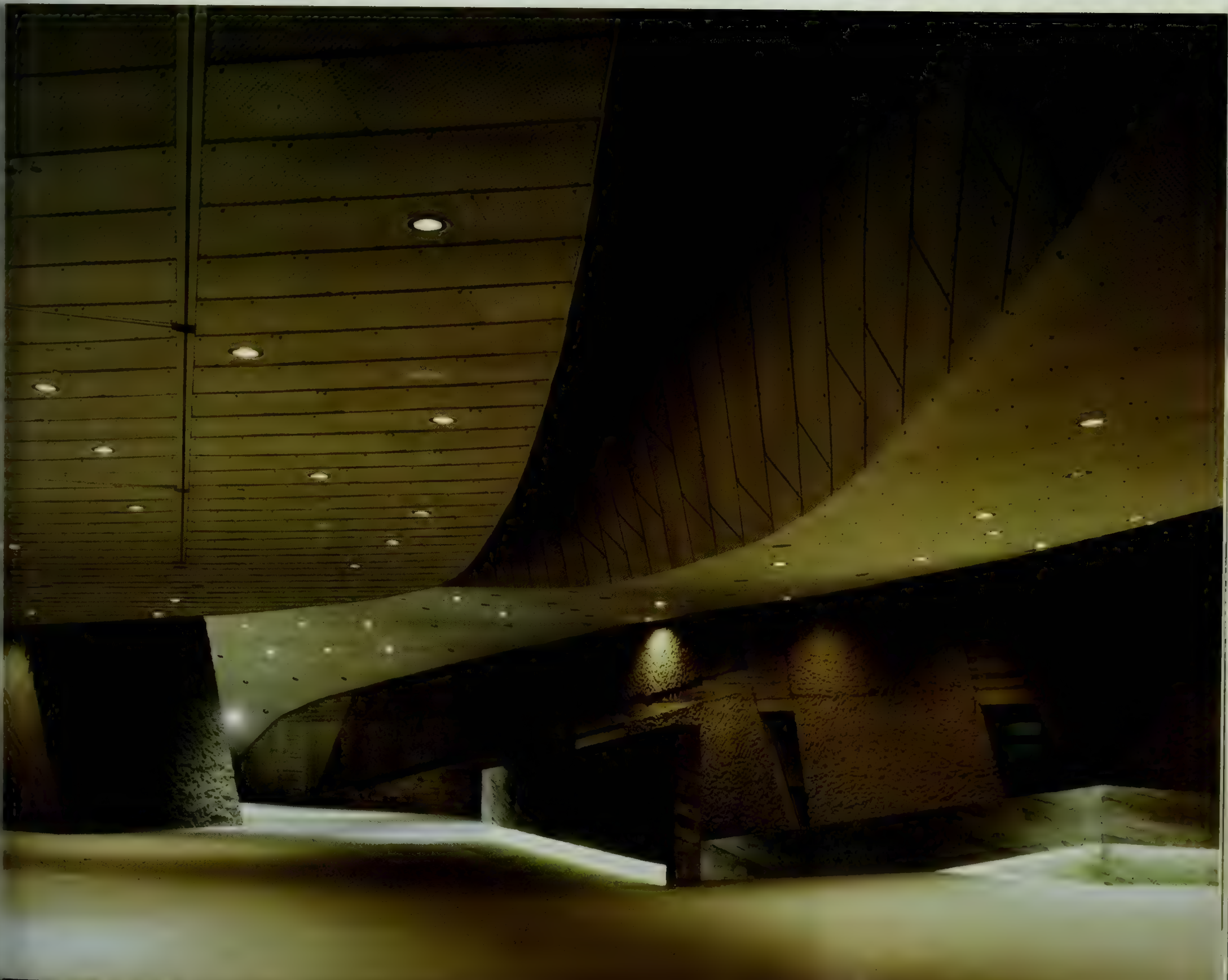
The project acquires something of the telluric force of a volca
crater in the interiors, which are finished principally in board-form
concrete. From the street, pedestrian ramps on each side of the ent
bring visitors into a protected outdoor forecourt, which can also be us
for programmed activities. The spatial compression of the main lobby
wide, deep, and dark, its low ceilings broken into wide beams by theat
cally lit gashes—gives way to the expansive space of the main hall, wh
the high clouds of the fiber-cement ceilings split to admit curving crevi
of natural light, and the bare piers and walls, deeply gouged to scat
sound, surround the spectator in a chorus of solemn, primitive presen

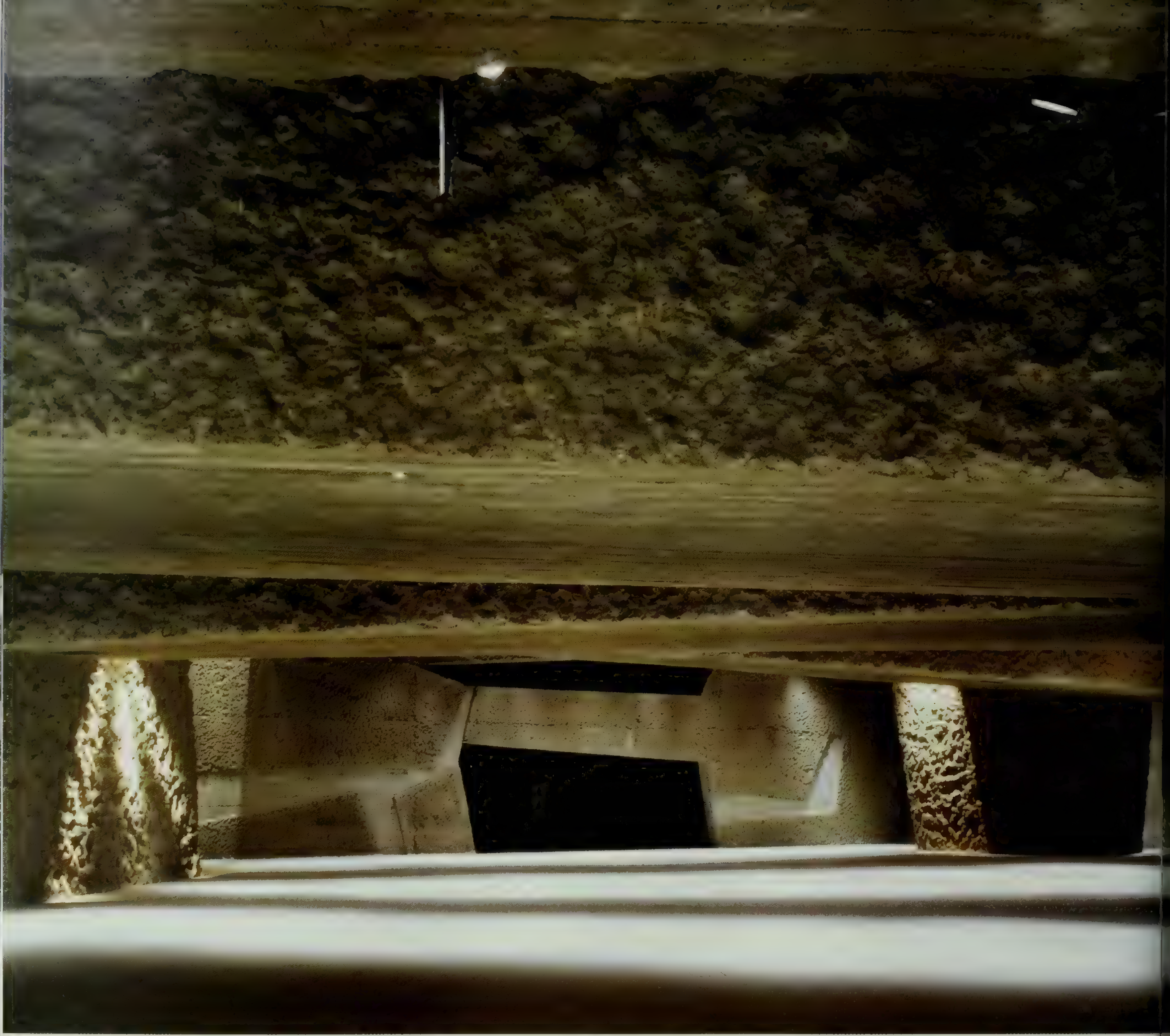
Furnishings and fittings are in keeping with this rough-he
approach, and show the architects' appreciation for salvage, also seen in th
other works and characteristic of an isolated island culture. Interior do
partitions, and folding walls are finished in sheets of perforated, galvani
steel. Menis used leftover fiber-cement panels and other materials for so
furniture. Local artist Juan Gopar created wall sconces from fluoresc
tubes wrapped in plastic sheeting and hung on grids of rebar. Elsewhere,
local theater director and teacher Carlos Belda installed budget spotlig
clamped to sections of used plumbing pipe, and Menis set a surplus exte
street light behind the main stair to create a "fountain of light."

Intricate calculations were needed to coordinate the inte
acoustical shape of the ceilings, the depth needed for beams spanning u
230 feet, and the final exterior forms. Although the architects had limi
means available, they tackled these complexities with resourcefulness.

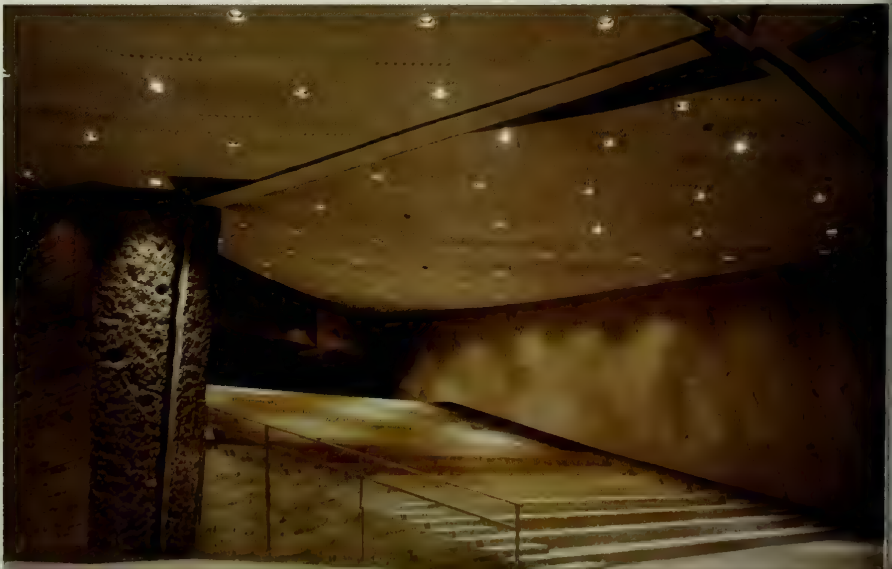


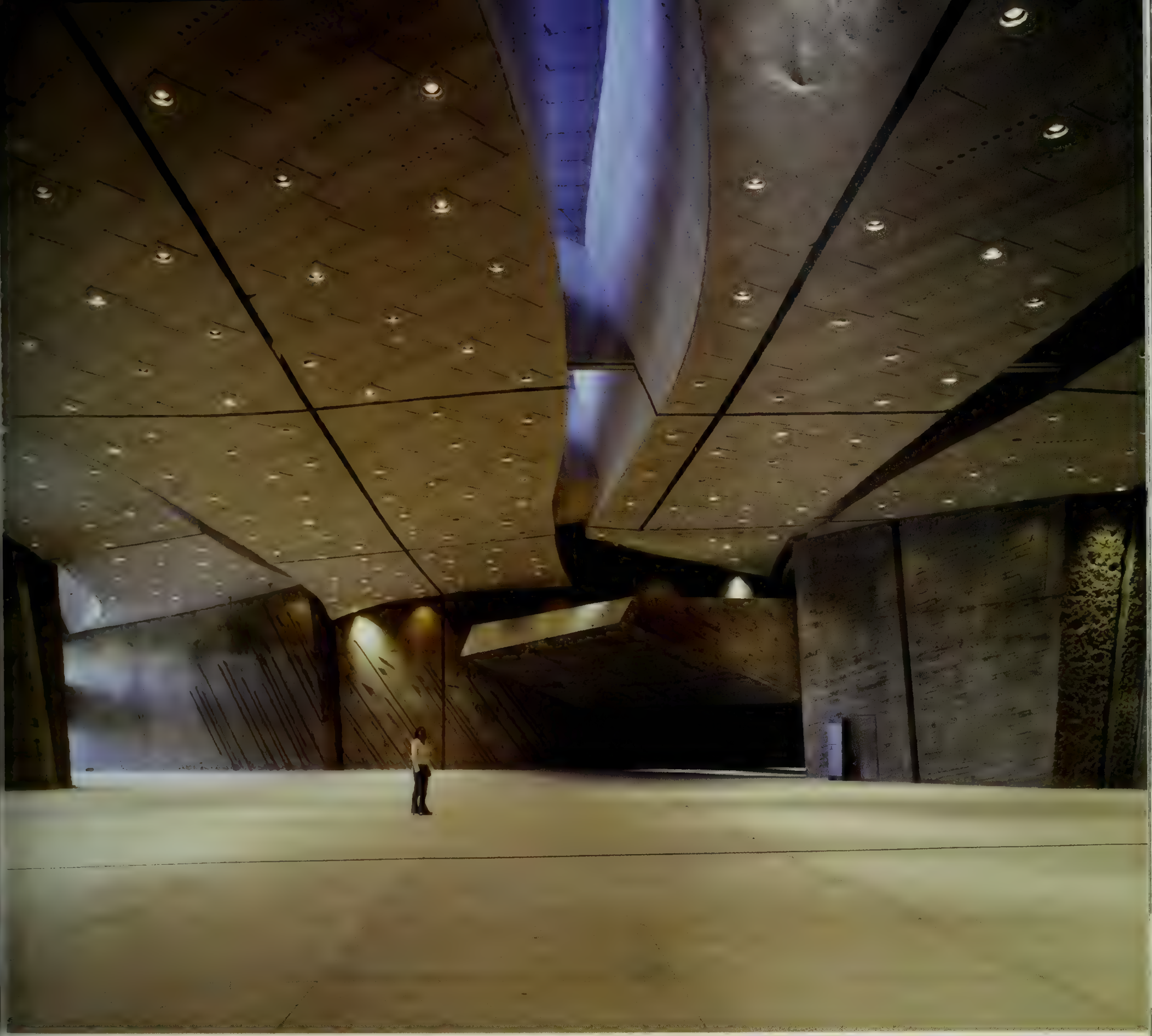
The main stair is a theatrical tour-de-force, owing to the board-formed concrete and dramatic lighting. Visitors ascend the main stair leading from the reception area (opposite, right) on the first floor to the top hall (left and opposite, left). The top hall's ponderous ceiling (below) is created from fiber-cement panels mounted on steel trusses, beams, and framing elements.





The spatial compression of the low-ceilinged, craggy-walled entrance lobby (above) contrasts impressively with the double-height main convention hall (opposite). The steplike seating in the main hall (right) is used for concerts and conferences. Auditorium seats can be bolted into place for an audience of 300.





ample, they began with a primitive mechanical “scanning” of a model ade of papier-mâché and sand molds, and refined the process over more an a year. They were aided in their endeavors by students from the adrid School of Architecture, along with AMP’s engineers, and the use of ATIA, the only design program capable of resolving the roof’s irregular rves into smooth planar surfaces.

The fiber-cement panels employed for the roof and other surfaces d never been used in curvature before. It required special sealants for the ,000 screw holes that penetrate it, and custom fasteners adaptable to its uble condition of roof and facade infill; for these, the architects adapted oustic vibration dampers that also permit movement, an application they ve patented. Flashing is hidden below the surface, while trench gutters event rainwater from spilling over its edges. Chilled air, acoustic insula- n, and the guide rails for the custom acoustic partitions of the halls are corporated in the roof’s interior spaces.

The fact that the architects had to resort to KATIA, the aerospace sign program that Frank Gehry used to design the Guggenheim Museum in Bilbao, is a reminder that the project is clearly a part of the post-Guggenheim landscape, with its fascinating formal possibilities. But while Gehry’s coiling titanium is light and crystalline in its reflective hardness, here in Tenerife form becomes soft, bland, dense—heavy with the labor of its making and of supporting its own weight. The Magma’s forms are solids in a semiturgid state of flux, like the ice of a moving glacier—a hardening lava flow or a sheet of red-hot steel in the mill, caught in the moment of metamorphosis that reveals the magic, vital force at the heart of making things. ■

Sources

Cement fiber roofing and acoustical ceilings: *Naturvex*

Floor and wall tile: *Parray*

Paints and stains: *Julio Crespo*

Office furniture: *Unifor; Wilkahn*

Fixed seating: *Alis*

Chairs and tables: *Kusch*

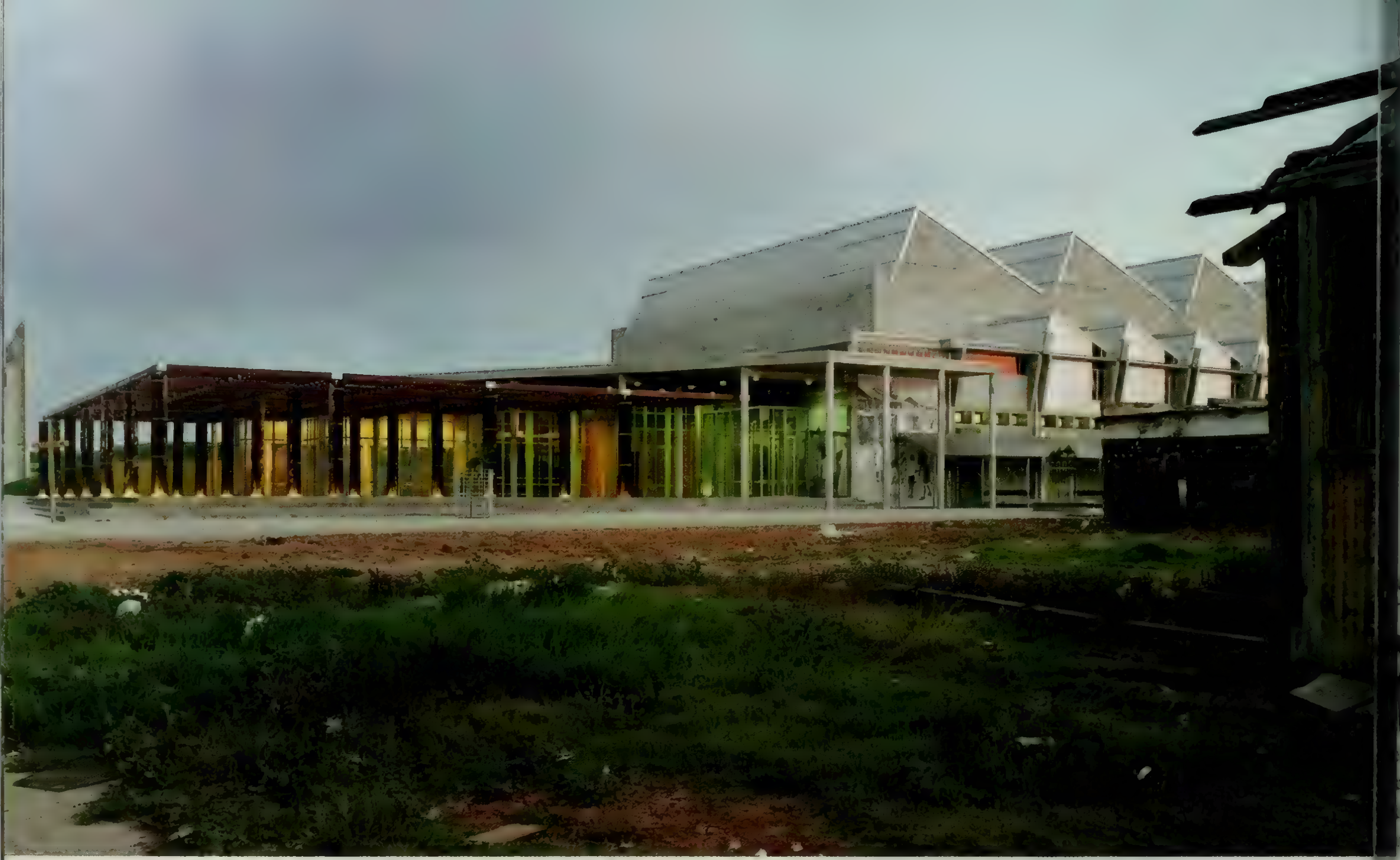
Upholstery: *Kvadrat*

Other furniture: *Moroso*

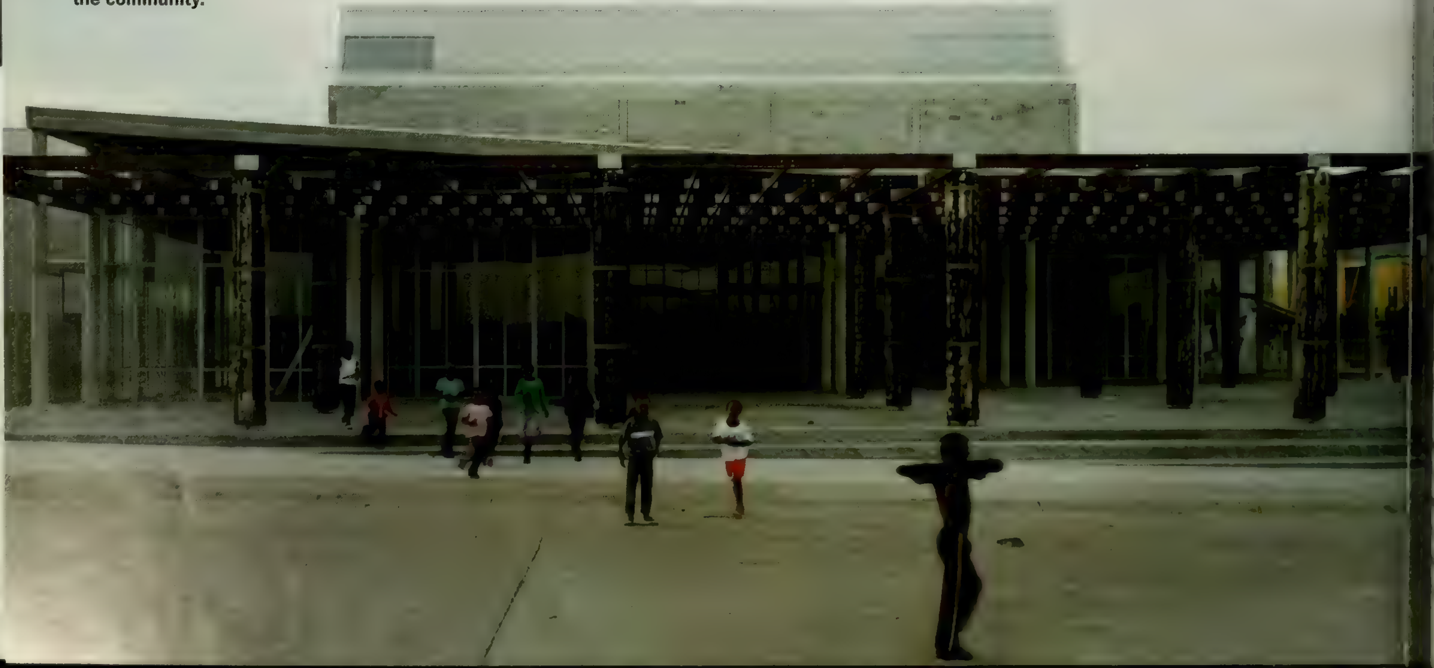
Task lighting: *Philips-Pacific*

Exterior lighting: *Philips-Norka*

For more information on this project, go to Projects at **www.archrecord.com**.



A sawtooth roof (above) recalls industrial buildings in the area and the role of labor in the antiapartheid movement. A large entry trellis (below) serves as a public space for the community.



Noero Wolff Architects commemorates the struggle against apartheid at the **RED LOCATION MUSEUM** in South Africa

Lisa Findley

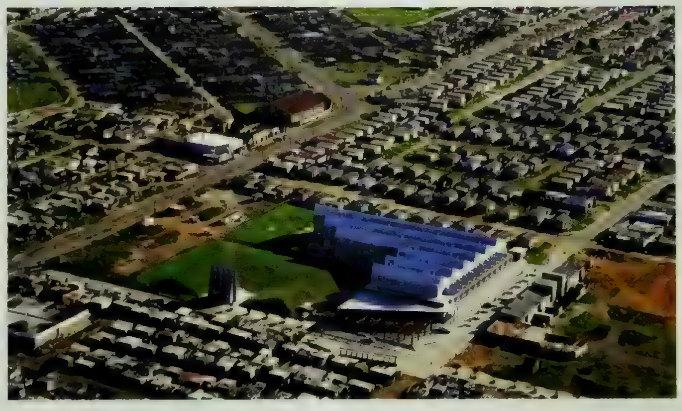
Rising above the ragtag roofs of nearby shacks and concrete-block houses, the imposing Red Location Museum provides a vivid contrast to the bleak landscape of the former black township of New Brighton, South Africa. Located 400 miles east of pe Town, just outside Port Elizabeth, New Brighton sits in the shadow factories and a giant power plant and pushes hard against the multiple acks of a busy railway line. Since the dismantling of apartheid in 1994, e community has struggled to make the transition from a 100-year-old gregated township for underpaid laborers into a real town with previsly unthinkable assets, such as decent housing, modern infrastructure, wide array of businesses, diversified transportation options, and civic stitutions. The museum is a vital part of this transformation.

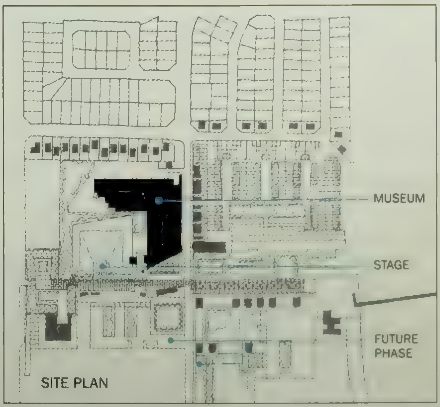
The Red Location Museum emerged from a national competition 1998 for the design of a civic precinct. Each entrant prepared a master an that included a museum dedicated to the struggle against apartheid, an ts center and gallery, a market, a library, a community hall, and some using—in the township's oldest neighborhood, called Red Location for e color of the corrugated-iron siding used on its oldest houses.

Noero Wolff Architects, a small, Cape Town–based firm with a cord of inventive projects in the townships, won the competition with a heme that was both dignified and lively. The 31,500-square-foot useum, with its adjacent outdoor amphitheater, is the first major build-g from the master plan to be completed, with the others to be done by 10. The museum serves as the soul of the new precinct. In the drawn-t struggle against racism and apartheid, the citizens of New Brighton re early and dedicated participants in civil disobedience, boycotts, and en antiapartheid violence, and much of this activity took place in Red cation. The museum honors the people involved in this struggle by ling their stories to visitors from the community and around the world.

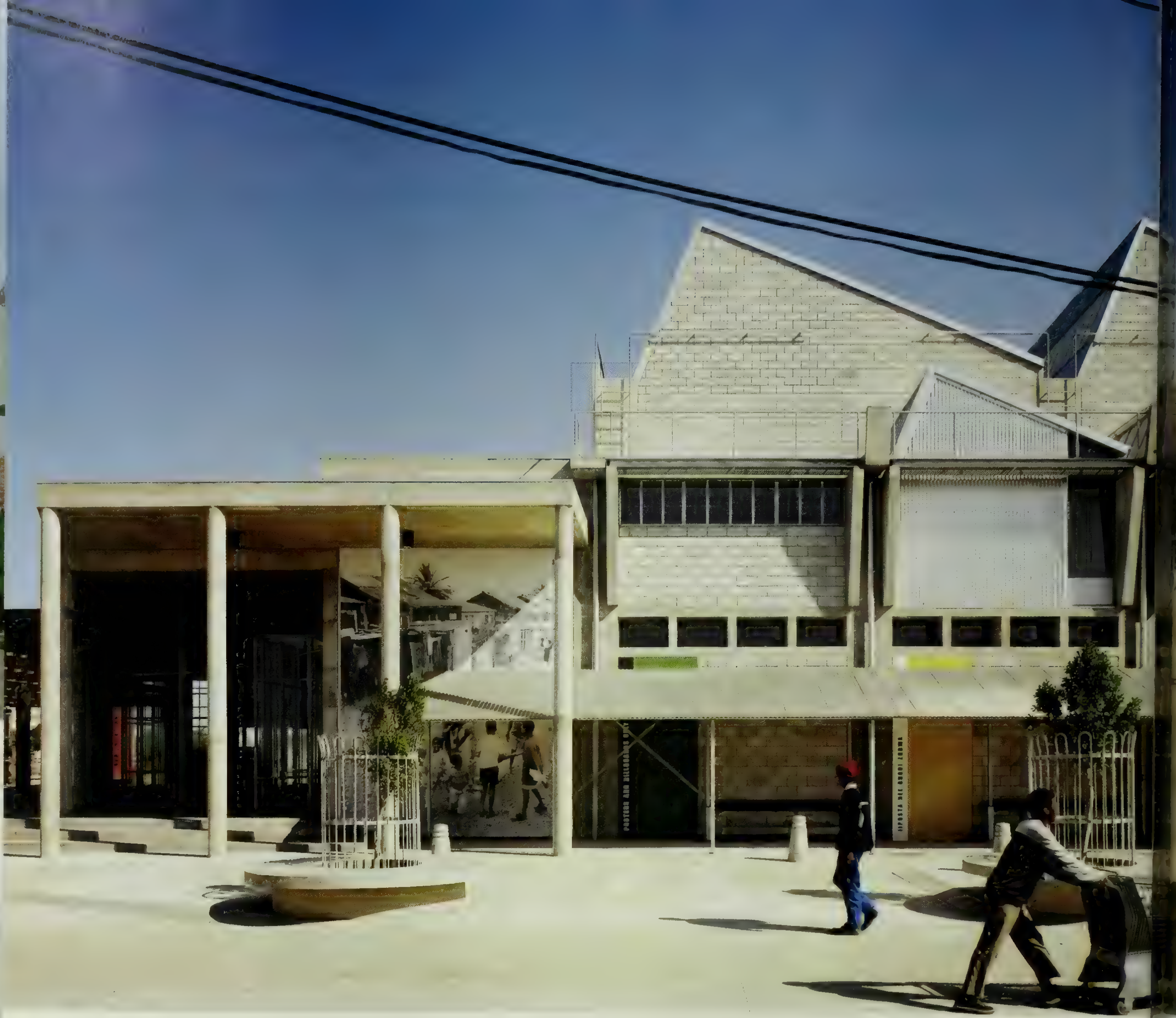
ntributing editor Lisa Findley is the author of Building Change: Architecture, litics and Cultural Agency *(2005), which includes the Red Location Museum.*

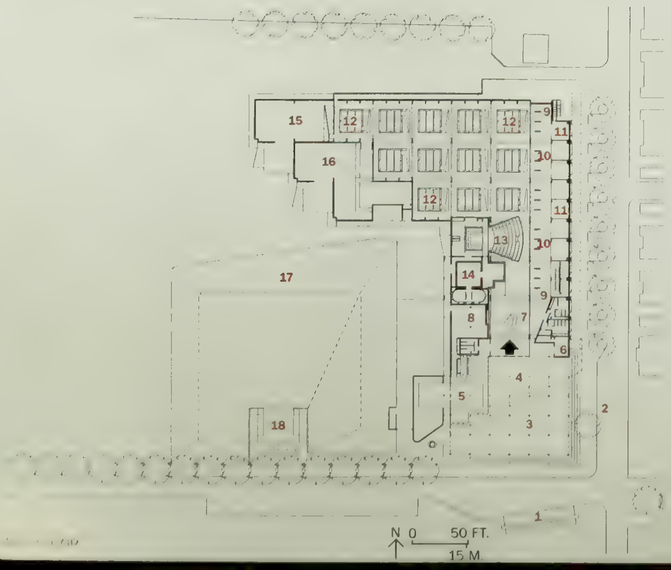
oject: *The Red Location Museum, w Brighton, South Africa*
hitect: *Noero Wolff Architects—Jo ero, Heinrich Wolff, Robert McGiven*
sociate architect: *John Blair hitects*
Engineers: *de Villiers & Hulme (structural, civil); C.A. duToit (electrical, mechanical)*
General contractors: *Alfdav Construction, in association with SBT Construction*





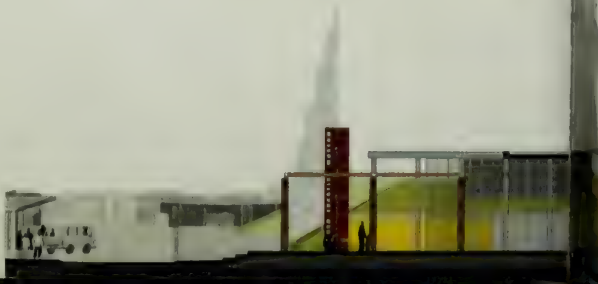
The museum sits within a poor township struggling to change (above). The cultural complex includes an outdoor stage/movie screen separated from the main building by a grassy amphitheater (top). Future development will include arts facilities and housing.

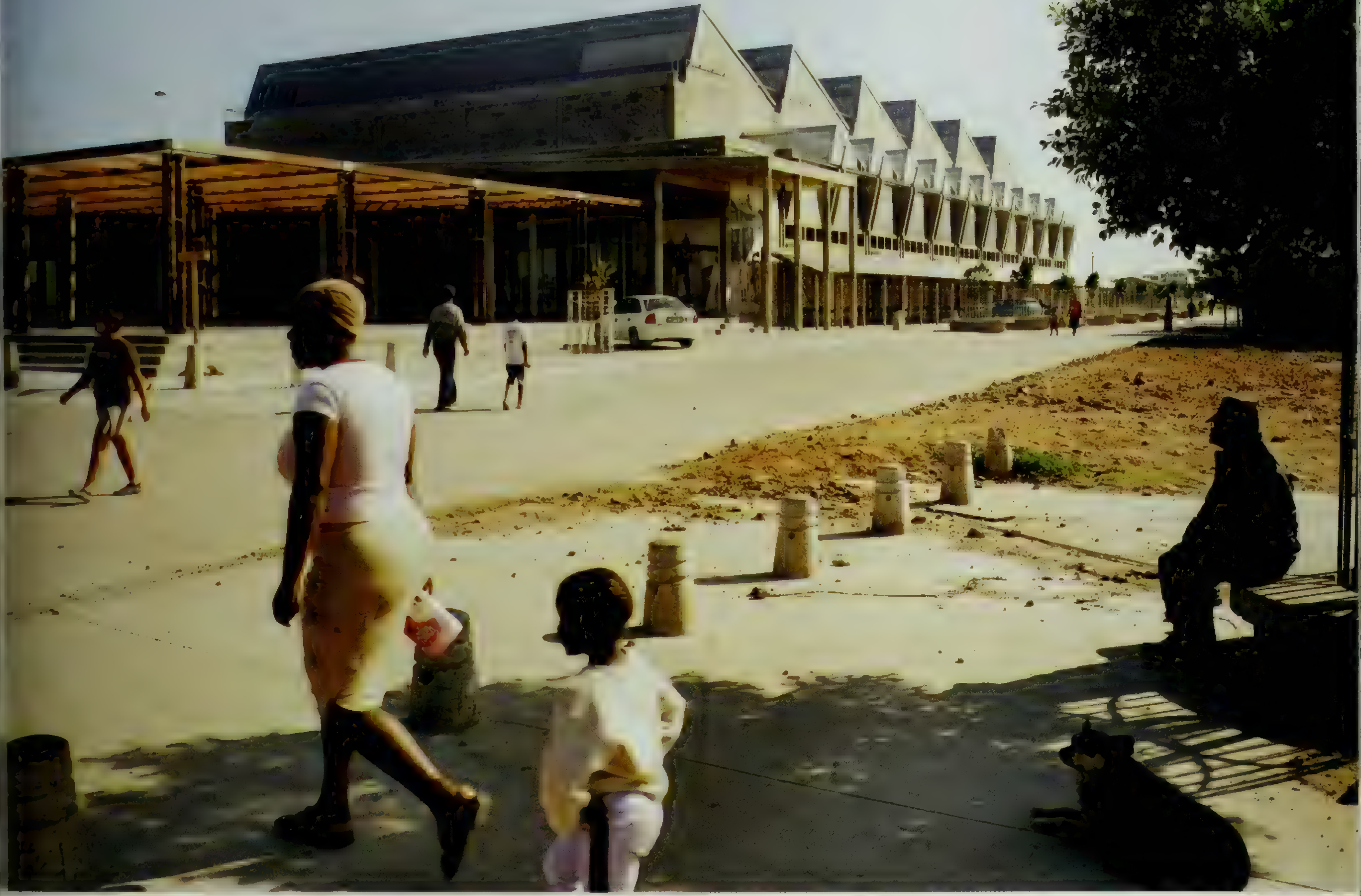




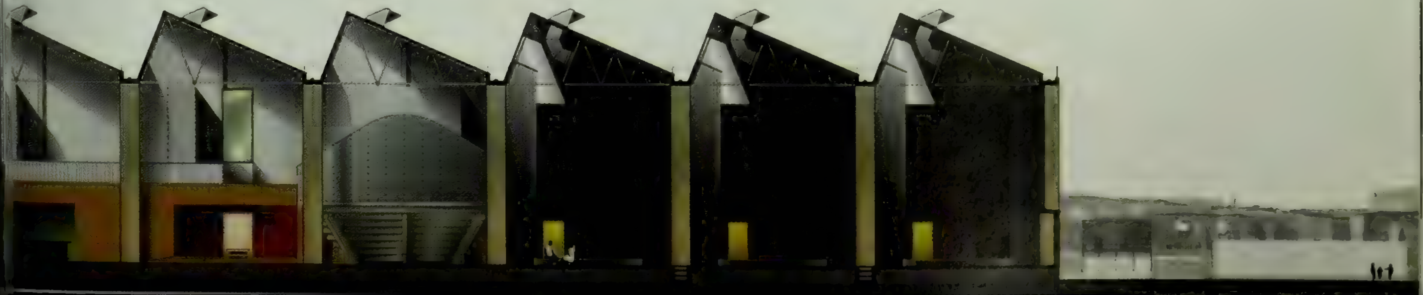
1. *Taxi stand*
2. *Bus stop*
3. *Public square*
4. *Covered porch*
5. *Restaurant*
6. *Museum shop*
7. *Reception*
8. *Kitchen*
9. *Column of Heroes*
10. *Time-line walk*
11. *Temporary exhibits*
12. *Memory box*
13. *Auditorium*
14. *Memorial*
15. *Art gallery*
16. *Storage/archives*
17. *Amphitheater*
18. *Movie screen/stage*

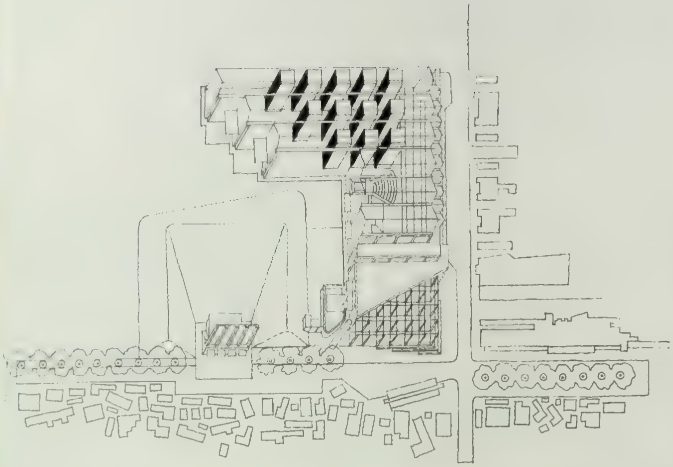
The architects broke the east facade (abo into segments and gave it a more dimin tive roof so it would relate to the housing they had designed across the street.





hough much larger d more imposing an the shacks and ncrete-block houses arby, the museum aches out to its ighbors with a large try terrace shaded by a trellis (above). A glassed-in restaurant on the west portion of the terrace and an adjacent beer garden (not seen) welcome the community and make the building more accessible. Because blacks and "coloreds" were barred from visiting cultural facilities during apartheid, local residents had little or no experience with these institutions.





Telephone poles bundled together support the entry trellis (right). An outdoor screen also serves as a stage (top). Materials are tough yet expressive (opposite).

This history and context meant that the architects confronted vo exceptional problems in the design of the museum—finding an appro- riate architectural language and a way of choreographing multiple stories.

Under apartheid, black and "colored" people were forbidden to sit museums, libraries, and other cultural buildings, except as employ- s, entering through the back door. As a result, such buildings have little ositive resonance with the people of New Brighton. So Jo Noero and einrich Wolff had to invent a different kind of architecture, one that ould be approachable and meaningful to people with no direct experi- nce of museums. They developed a robust, though refined, industrial sthetic for the museum, creating a huge, singular volume enclosed by a oncrete frame in-filled with concrete block. A sawtooth roof echoes the rms found in the manufacturing zone across the train tracks while also onoring the antiapartheid movement's history of organizing in factory ttings. The resulting architecture is simultaneously familiar and fresh.

To create the Red Location Museum, Noero Wolff reconceived mmon factory construction, then made sure the structure was elegantly ilt. The fine detailing of the concrete block, corrugated-iron sheeting, d plaster panels elevates and celebrates the ordinary materials the peo- e of the township have always salvaged for use in their houses. At the mmunity's insistence, the contractor employed a closely supervised and carefully trained rotating labor pool drawn from the township.

Designing such a massive building in the midst of the township's domestic scale was a bold move. While the museum's size and blank walls could easily have overwhelmed daily life in the neighborhood, Noero Wolff carefully stepped down the scale and humanized the two edges of the building that meet pedestrians and the street.

At the entry, a generous terrace sits a few steps above the sidewalk, welcoming people with a wooden trellis supported on a grid of columns made of telephone poles bundled together with heavy wire. This rough detailing brings to mind the resourcefulness of township residents who often piece together found materials to make their homes. Closer to the museum's front door, the columns become concrete, thinner and taller, and a corrugated-iron roof extends overhead. Emphasizing the public nature of the building, the architects created a glassed-in restaurant on one side of the entry doors and a gift shop. With its columns and shaded space, the terrace is both a formal entry to the museum and a

NOERO AND WOLFF HAD TO INVENT AN ARCHITECTURAL LANGUAGE APPROPRIATE FOR TELLING THE STORIES OF APARTHEID.

Along the eastern side of the museum, the architects created an impressive time-line walk bordered on one side by concrete slabs dedicated to heroes of the fight against apartheid (top). Lighting throughout the museum was designed by Mannie Manim and ranges from somber areas for contemplation to brighter ones, such as the entry lobby, gift shop, main circulation spaces, and the auditorium and stage (above).

public square where vendors can display their wares, visitors gather, an celebrations take place.

On the long east side of the building, Noero Wolff attached a two story bar with administrative offices, a library, and meeting rooms on th second floor and temporary exhibition galleries below. Smaller in scale tha the main volume of the museum, it helps the building relate to its residential neighbors, and its smaller saw-tooth roof matches that of th experimental housing Noero Wolff designed in 1999 across the street.

In contrast to the bright, clear South African sunlight, the architects treated the museum interiors as a realm of shadow and myster After moving past a spacious entry hall, visitors encounter the entry to th tombs of two of New Brighton's most honored antiapartheid activist and a small, galvanized-steel-clad theater. Beyond these, Noero Wol designed a vast space dimly lit from sawtooth skylights 36 feet above. dozen, 15-foot-square rooms stand as sentinels in the space. Encased i rusted corrugated iron—a reference to the old Red Location houses— each has only a single door and presents one perspective on apartheic Some of these stories are personal, some are thematic. The architects ca the rooms "memory boxes," the term used by migrant African laborers fo the colorful, hand-painted trunks in which they keep their possession

While the boxes are filled with information—most of it disturbing—the great hall in which they sit asserts a powerful sense of silence. It a place of contemplation between episodes of harsh, sometimes contradictory views of apartheid. It is also a place of tension where visitors are no sure what reality they will confront in the next memory box. "Durin apartheid, there was this weird daily normalcy," says Noero. "But it was fragile cover for the underlying tension and sense of impending doom th was everywhere. One never knew what would happen next."

FREEDOM OF MOVEMENT IS A PROFOUND EXPERIENCE FOR THOSE WHO SUFFERED THE RESTRICTIONS OF APARTHEID.

Noero Wolff's design makes an intriguing contribution to th international debate on the nature of museums that take on humanity darkest episodes. Most South Africans acknowledge there is no sing truth about apartheid, only myriad perspectives. So instead of funneli visitors through a single narrative history, the grid of memory boxes le the array of discrete stories accumulate, like memory, into a fragmente imperfect sense of the past. The freedom of movement and choice engagement offers a profound experience for those who suffere through the decades of pass laws that stipulated where nonwhite Sout Africans could be and when.

Emerging from the museum's twilight interior, the visit encounters once again the life of the town: laundry fluttering on improvised drying lines, teenagers hanging out, and children using the new b shelter as a jungle gym. Their laughter brings home the underlying sto of this first piece of civic architecture in New Brighton: These childre have been born into a nonracist democracy. Their future was secured b the unrelenting sacrifices of their parents and grandparents. Through i architecture, the Red Location Museum contains and conveys this simu taneously somber and joyful truth. ■

Sources

Galvanized structural steel: *Mittal Steel*

Concrete block: *Deranco Blocks*

Timber flooring: *Tsitsikamma Pine*

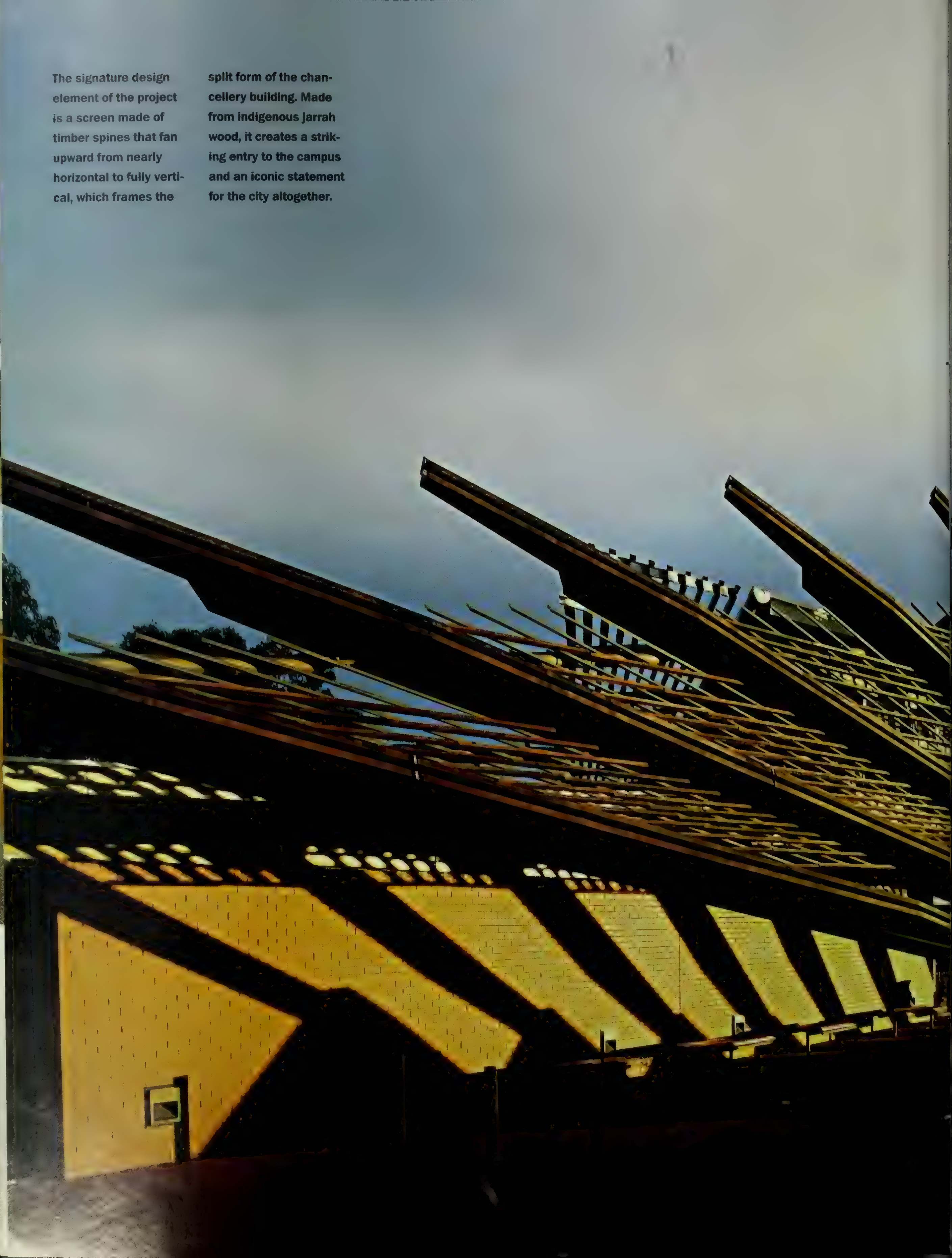
Honed slate tiles: *Mazista*

Painted timber paneling: *Supawo*

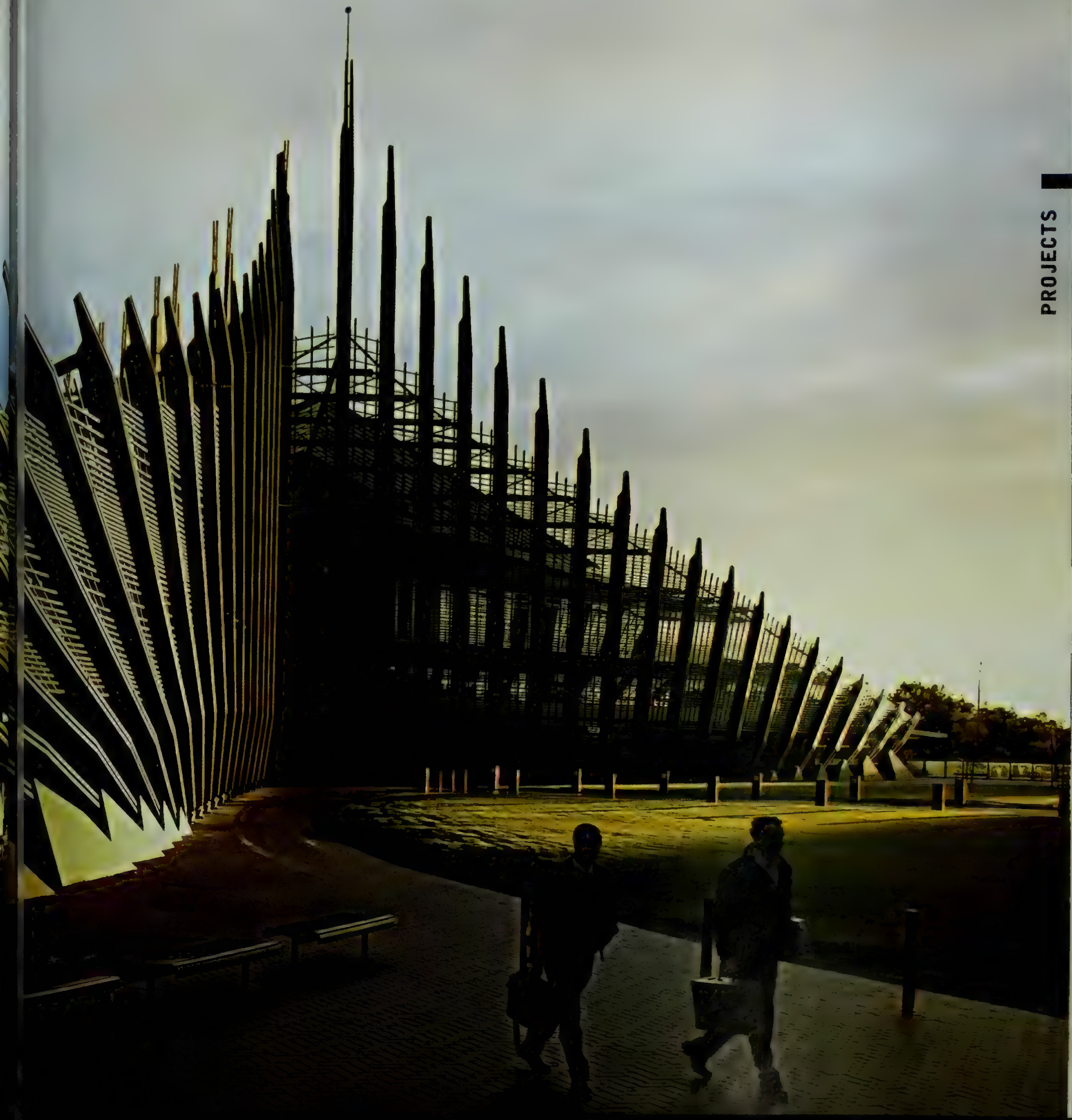
For more information on this proje go to Projects at **www.archrecord.com.**

grid of 12 tall rooms
and as somber con-
iners inside the
useum. Each of these
-foot-square “mem-
y boxes” presents
different perspective
apartheid, so
gether they show
at history contains
ny different views.

The signature design element of the project is a screen made of timber spines that fan upward from nearly horizontal to fully vertical, which frames the split form of the chancellery building. Made from indigenous jarrah wood, it creates a striking entry to the campus and an iconic statement for the city altogether.



With its thorny reptilian crown, fjmt's new CHANCELLERY BUILDING AND BUSINESS SCHOOL puts the Joondalup campus of Edith Cowan University on the map



By Christopher Moore

Sitting atop a prominent hill in the Perth suburb of Joondalup, Australia, this university facility, designed by Francis-Jones Morehen Thorp (fjmt), in collaboration with Hassell as associate architect, peeks above the treetops like a crown. Inspired by the native xanthorrhoea plant, a grass tree common in Perth, these four buildings house the school of business, the vice chancellor's offices, and the administrative center for Edith Cowan University's Joondalup campus.

One of the most remote cities on Earth, Perth sits on the far western coast of Australia. The nearest city of significant population is a 28-hour drive east. Richard Francis-Jones, fjmt's design director, believes this geographic isolation didn't directly impact his firm's design, but did give it a freedom rarely experienced in its projects on Australia's east coast. "This really is a frontier site. The work we normally do is within a tight urban context where the overriding consideration is dealing with the surrounding built environment. Here, though not a completely natural, rural site, we had the opportunity to expand further on our vision."

Edith Cowan was instrumental in women obtaining the vote in Australia, and she appears on the Australian $50 bill. She established a school to train teachers in Perth in 1902, and the university that grew out of the original site of the school is now the second largest in Western Australia. Consisting of three metropolitan campuses and one rural campus, it has more than 23,000 students enrolled.

Contributing to the youngest of the four campuses, this 150,000-square-foot complex consists of two triangular volumes that form a public plaza, with a third linear complex consisting of two buildings. The signature of the project is its striking use of timber spines that fan upward from nearly horizontal to fully vertical at their apex. Built from jarrah, an Australian hardwood that is beautifully grained, rich in color, hardy, and resilient, the struts fan upward and outward, giving the design a sense of majesty. On one side, this curving form frames the vista of a nearby lake and spacious green lawn; on the other side, it opens wide in a welcoming gesture to the main arterial road into the city. "This is a city with a lot of growing to do," Francis-Jones explains. "We wanted to create a sense of aspiration in the design for the staff and students of the university, as well as an urban landmark for the city."

Francis-Jones acknowledges that part of the program for the site was to create a project that would anchor the university. "As was the case with a number of other Edith Cowan University campuses, Joondalup needed to identify the university within the academic community and also stand for the values and vision of the school. Beyond that, there was a desire for a broader civic role for the city of Joondalup."

Like most of the materials used in the building, the jarrah timber is native to this part of Australia. Using paired laminated spines made of jarrah, the architect crafted a screen with I-beam-looking columns, connected to I-beam-styled outriggers in the floor and roof planes. The batten screen

Christopher Moore is a Melbourne-based design and architecture writer and a regular contributor to Houses, *the Australian contemporary residential magazine.*

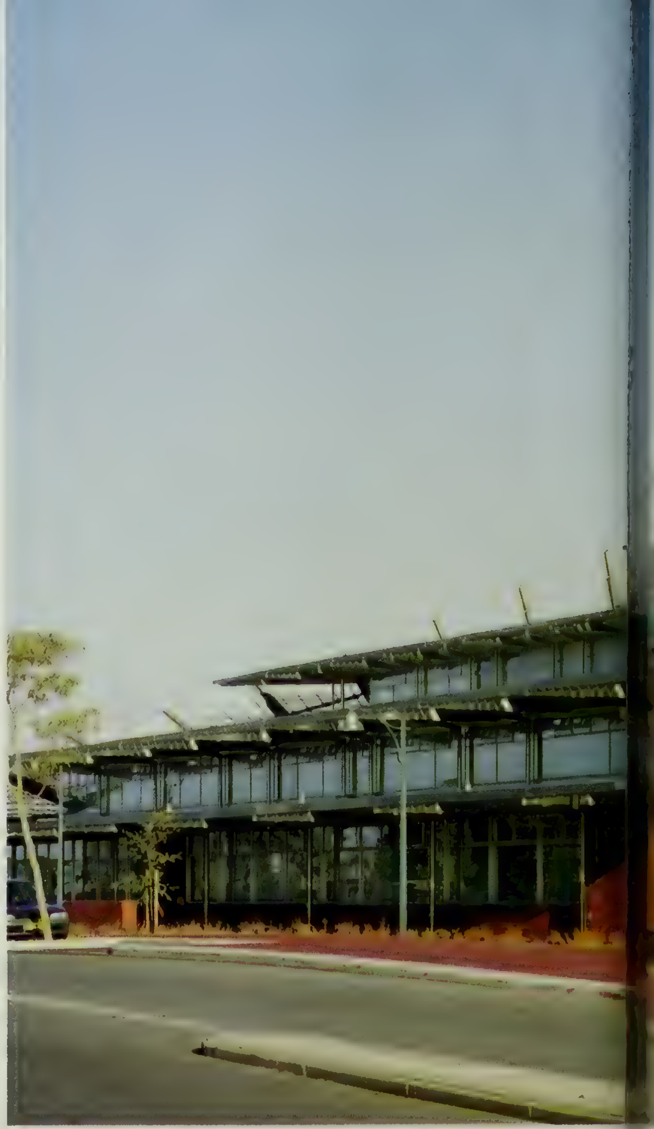
Project: *New Chancellery Building and Business School, Edith Cowan University, Joondalup, Australia*

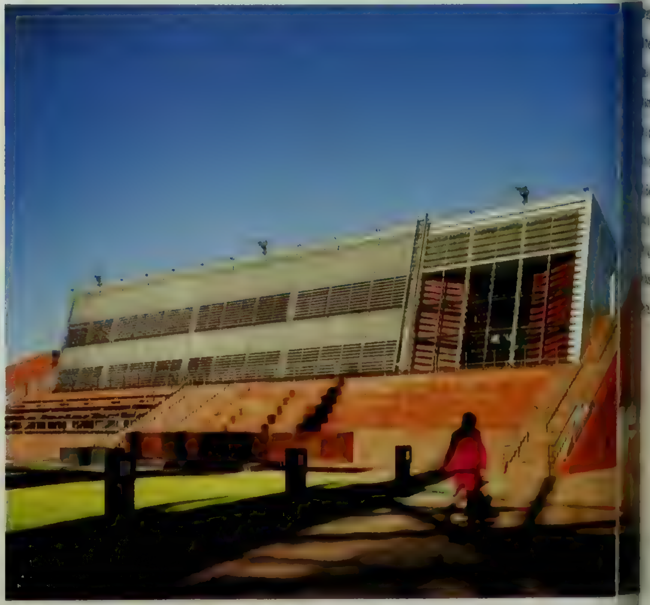
Architect: *fjmt—Richard Francis-Jones, David Haseler, Elizabeth Carpenter, Lance White, Justin Wong, Jason Wedesweiler, Olivia Shih, Johnathan Redman, Matthew Todd, design team*

Associate architect: *Hassell*

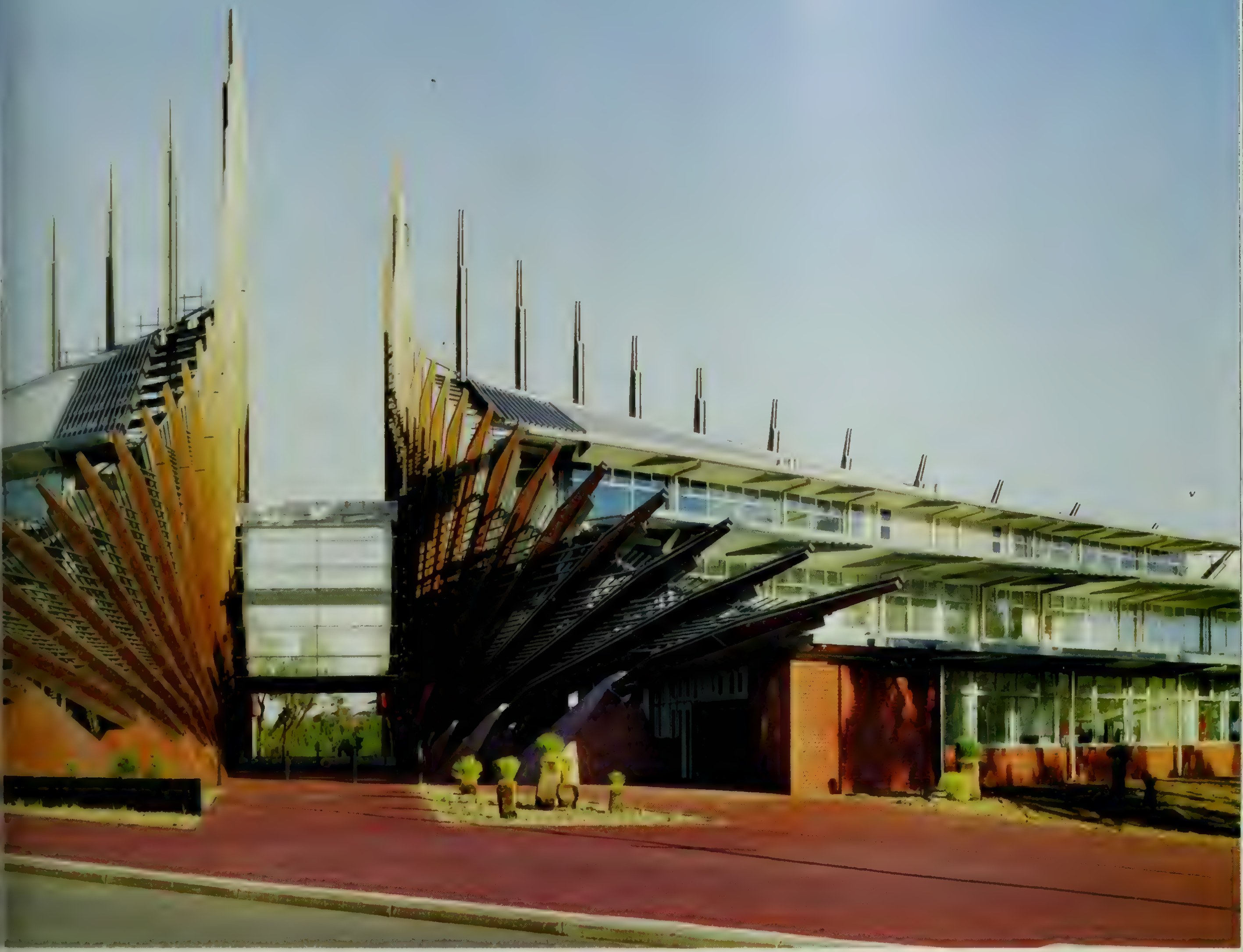
Engineer: *Bruechle Gilchrist & Evans (structural); BCA (mechanical)*

Consultants: *Engineering Technology Consultants (electrical and lift); MEL Consultants (wind); Arup Fire (fire) RC Oma Design Services (hydraulic)*





PHOTOGRAPHY: © JOHN GOLLINGS



ramatic entry plaza
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sh screen estab-
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and a lawn create a
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he business school
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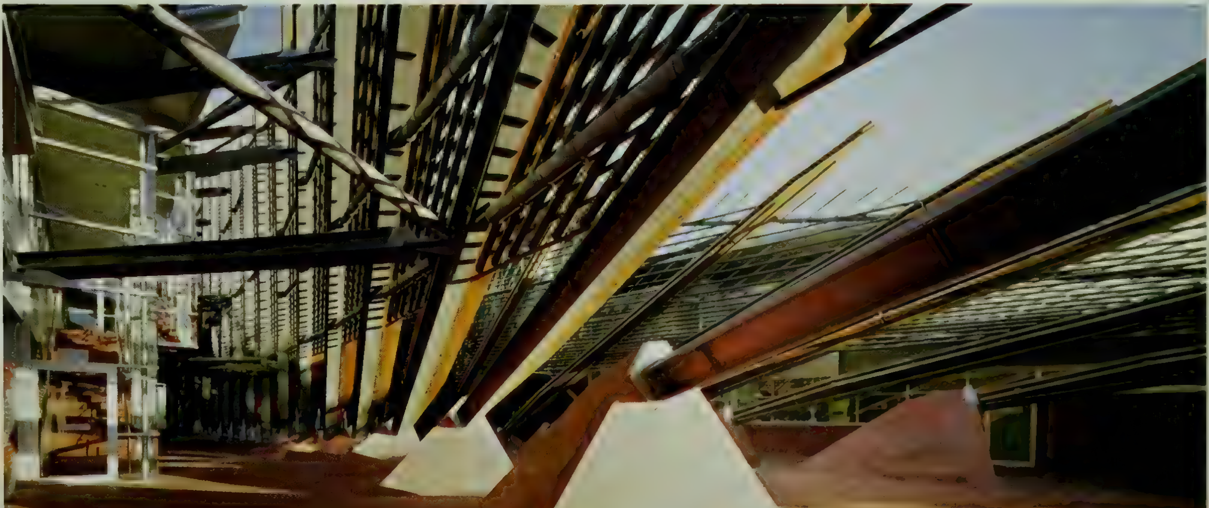


that meshes these spines together is made from recycled jarrah, cut from railway ties, connected to galvanized and painted Z-sections. The tapered ends of the jarrah members are proportional to their overall length, thus conveying a subtle, secondary arc along the top and bottom of the facade.

The jarrah struts are not simply decorative, but in fact "they form a colonnade at ground level and create shading for the internal spaces, as well as reduce glare from the buildings themselves," Francis-Jones explains. "They create an interstitial space between them and the two buildings they face: the triangular vice chancellor's building and the administrative building." The architects place circulation in the space between the timber screen and the main foyer. Stairways and elevators in this shaded zone open to the view, creating informal meeting places in the atrium and drawing occupants to the outside as they move between the floors and wings of the building. The two buildings behind the struts are joined by a glass bridge.

Internally, the fit-out is simple, with an emphasis on function. Francis-Jones describes the interiors as "materially warm with modest detailing." The palette of colors and finishes reflects the browns and oranges predominant in the nearby desert.

The four volumes that make up the complex are all three stories high, with the elongated business school buildings rising up from the hill behind them and stepping down toward the lawn of the plaza. This terraced section serves as a gathering place for students having lunch, as well as bleacher seating for outdoor events. "When the completed buildings were opened to the public, the university held an opening and the crowds filled the terraces, which have become extensions of the lawn area," explains the architect.

The reinforced concrete frame of the structures primarily utilizes prestressed slabs with steel framing on the first level and steel roof framing throughout the project. The design incorporates an outdoor gathering space, a café, a bookstore, and underground parking for 200 automobiles, as well as the administrative offices for the campus, lecture theaters for the school of business, a gallery, and a space designated for hosting university functions. The architecture integrates building services so the designed form and open spaces are not affected by infrastructural clutter. For example, fumes from car exhaust in the underground car-park are disposed inconspicuously via flues that rise alongside the chancellery building elevator shafts.

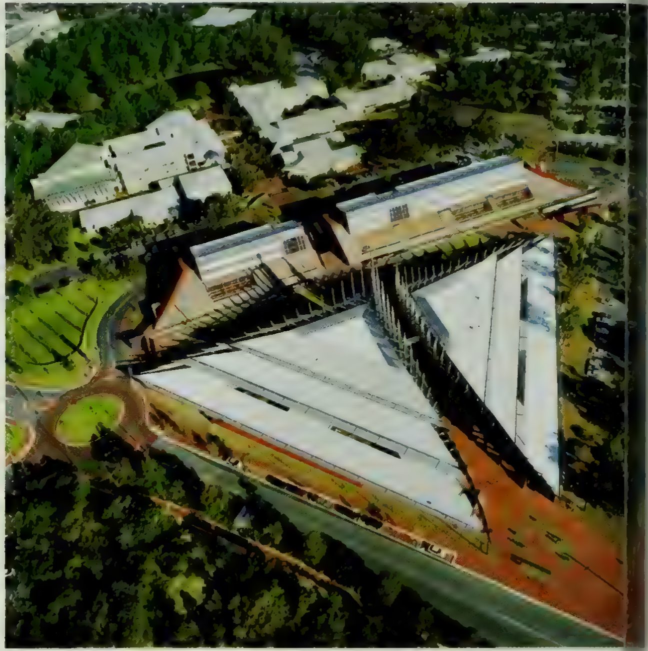
The new complex is surrounded by a handful of older university buildings whose vintage stretches back to the early 20th century. Francis-Jones says this project has transformed the master plan for the university and will set the stage for new construction in the coming years. While the project is slightly overscaled to the existing context of buildings, it indicates what is to come. "In the future, this campus will be of a much higher density. These buildings are designed to forecast that growth, while retaining a sense of the landscape and existing character. The organic forms of the architecture have been developed to appear to rise naturally out of the landscape itself."

Driving into Joondalup from the south, the striking forms of the jarrah screen offer a bold and confident greeting. It bodes well for a city that Francis-Jones rightly states "has a lot of growing to do." With this campus as a fulcrum for that growth, the seed has been planted both intellectually and architecturally. ■

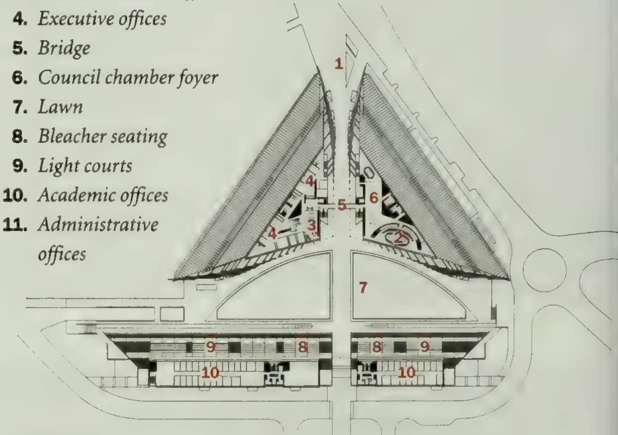
Sources

Exterior cladding: *Midland brick*
Metal curtain wall: *Symonite*
Metal roofing: *Bluescope Steel*
Windows/doors: *Capral Aluminum*
Hardware: *Lockwood*
Closers: *Dorma*
Pulls: *Dalco*
Cabinet hardware: *Hafele*
Ceilings: *Armstrong*
Paints/stains: *Dulux Ferreko*
Lighting: *Austube*

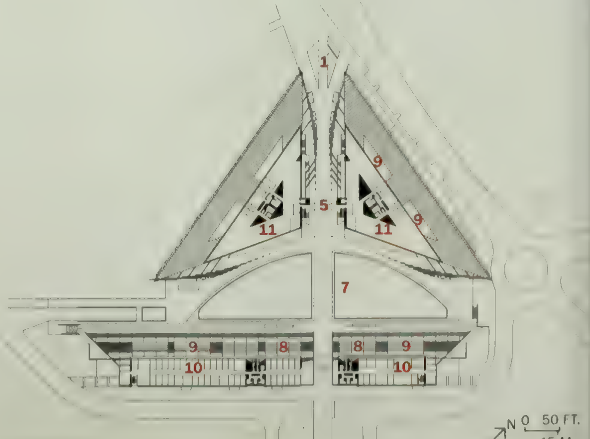
For more information on this project, go to Projects at **www.archrecord.com.**



1. *Entry plaza*
2. *Council chamber*
3. *Vice Chancellor's office*
4. *Executive offices*
5. *Bridge*
6. *Council chamber foyer*
7. *Lawn*
8. *Bleacher seating*
9. *Light courts*
10. *Academic offices*
11. *Administrative offices*

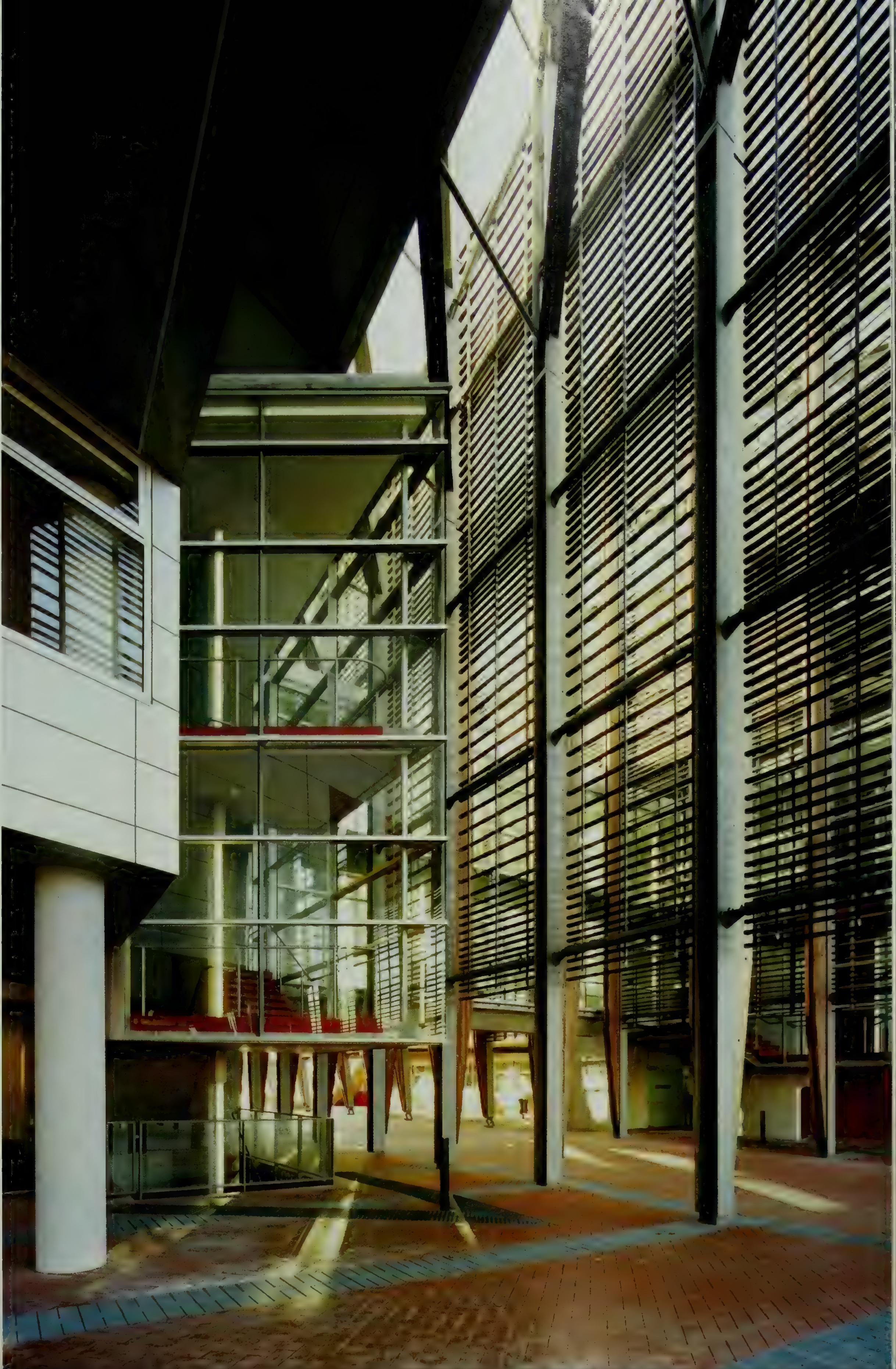


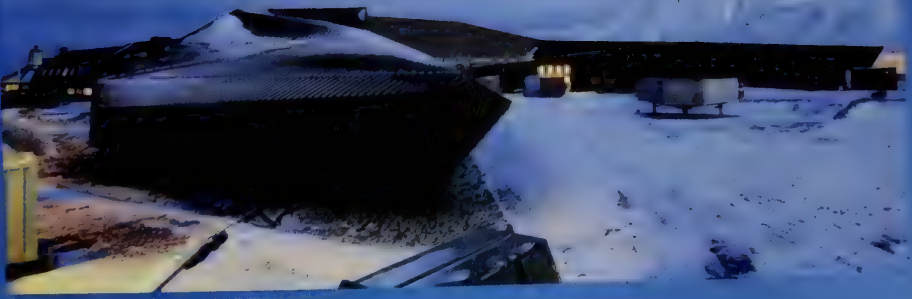
LEVEL FOUR



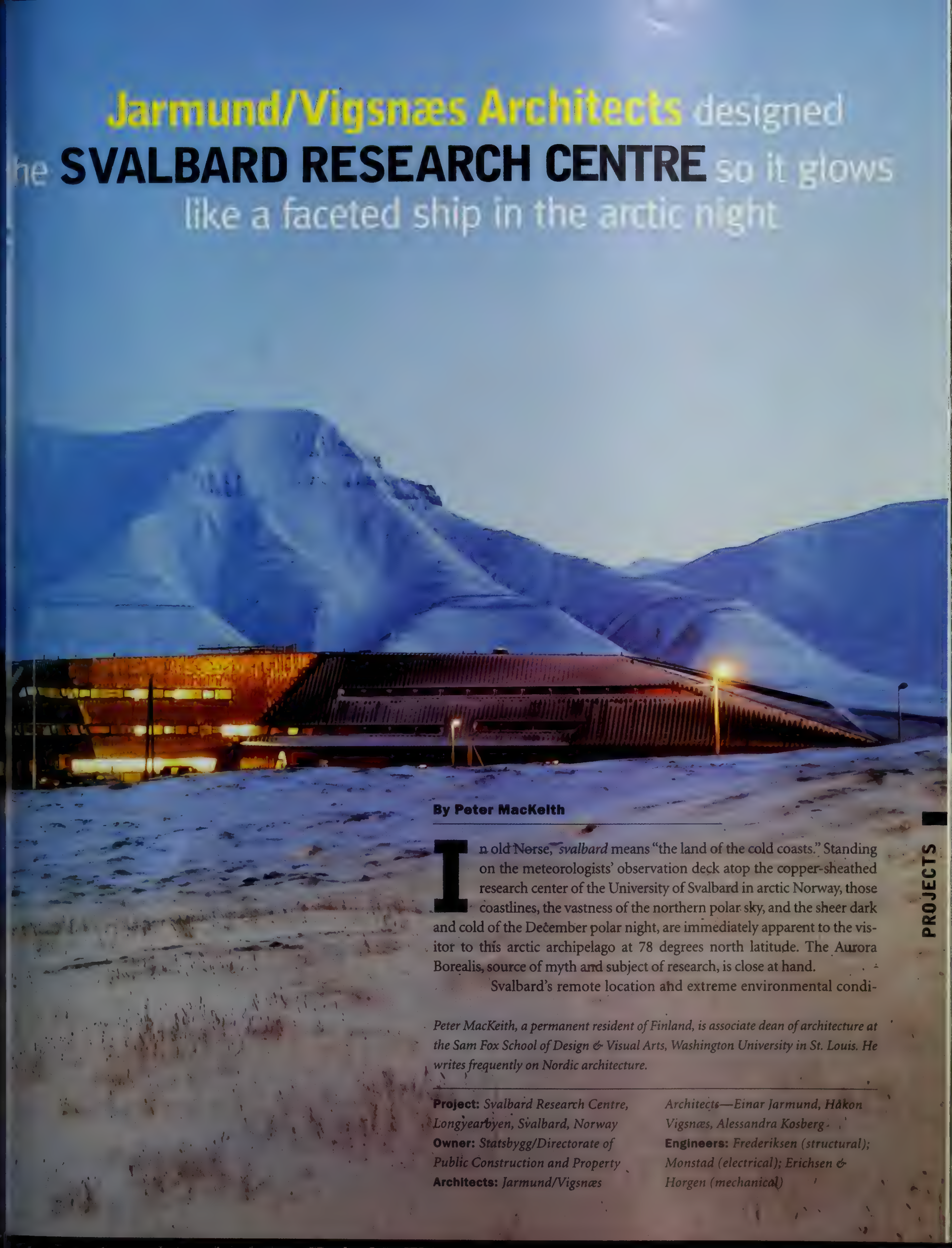
LEVEL THREE

aerial view, over-
king the chancellery,
idemic building, and
npus illustrates the
matic scale created
the complex (oppo-
). The jarrah struts
n a screen that
uces glare from the
dings themselves
creates an inviting
nnade at ground
el (right).





Built to withstand hardship, the exterior skin of the building appears as an "anorak"—a continuous skin in which the walls and roof are undifferentiated and drape the faceted surfaces of the form (inset, right).



Jarmund/Vigsnæs Architects designed he SVALBARD RESEARCH CENTRE so it glows like a faceted ship in the arctic night

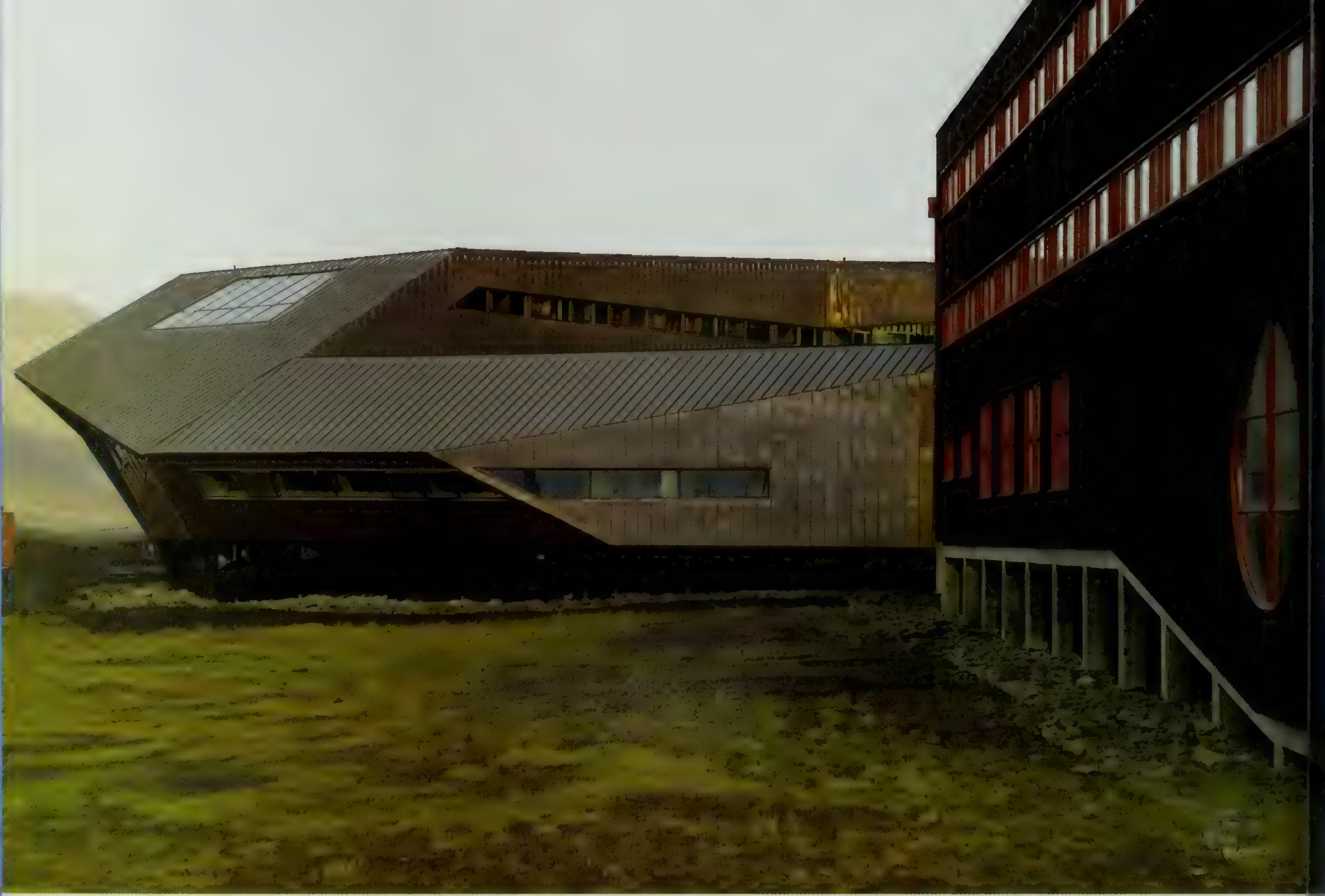
By Peter MacKeith

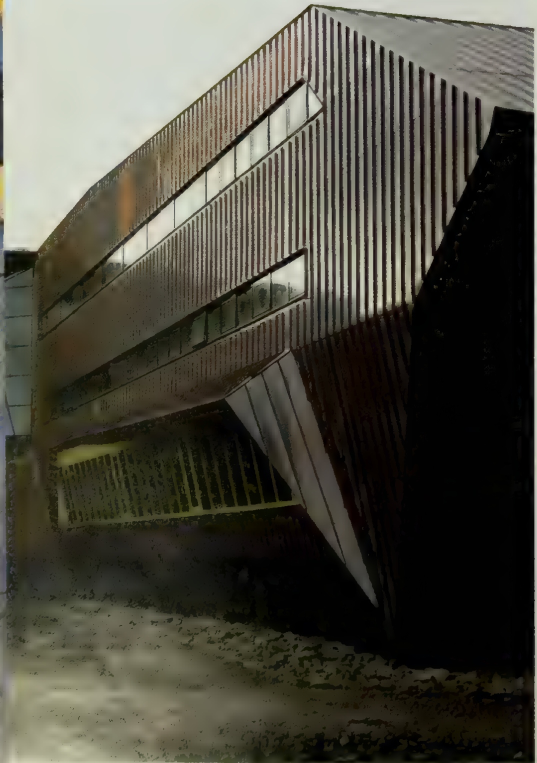
In old Norse, *svalbard* means "the land of the cold coasts." Standing on the meteorologists' observation deck atop the copper-sheathed research center of the University of Svalbard in arctic Norway, those coastlines, the vastness of the northern polar sky, and the sheer dark and cold of the December polar night, are immediately apparent to the visitor to this arctic archipelago at 78 degrees north latitude. The Aurora Borealis, source of myth and subject of research, is close at hand.

Svalbard's remote location and extreme environmental condi-

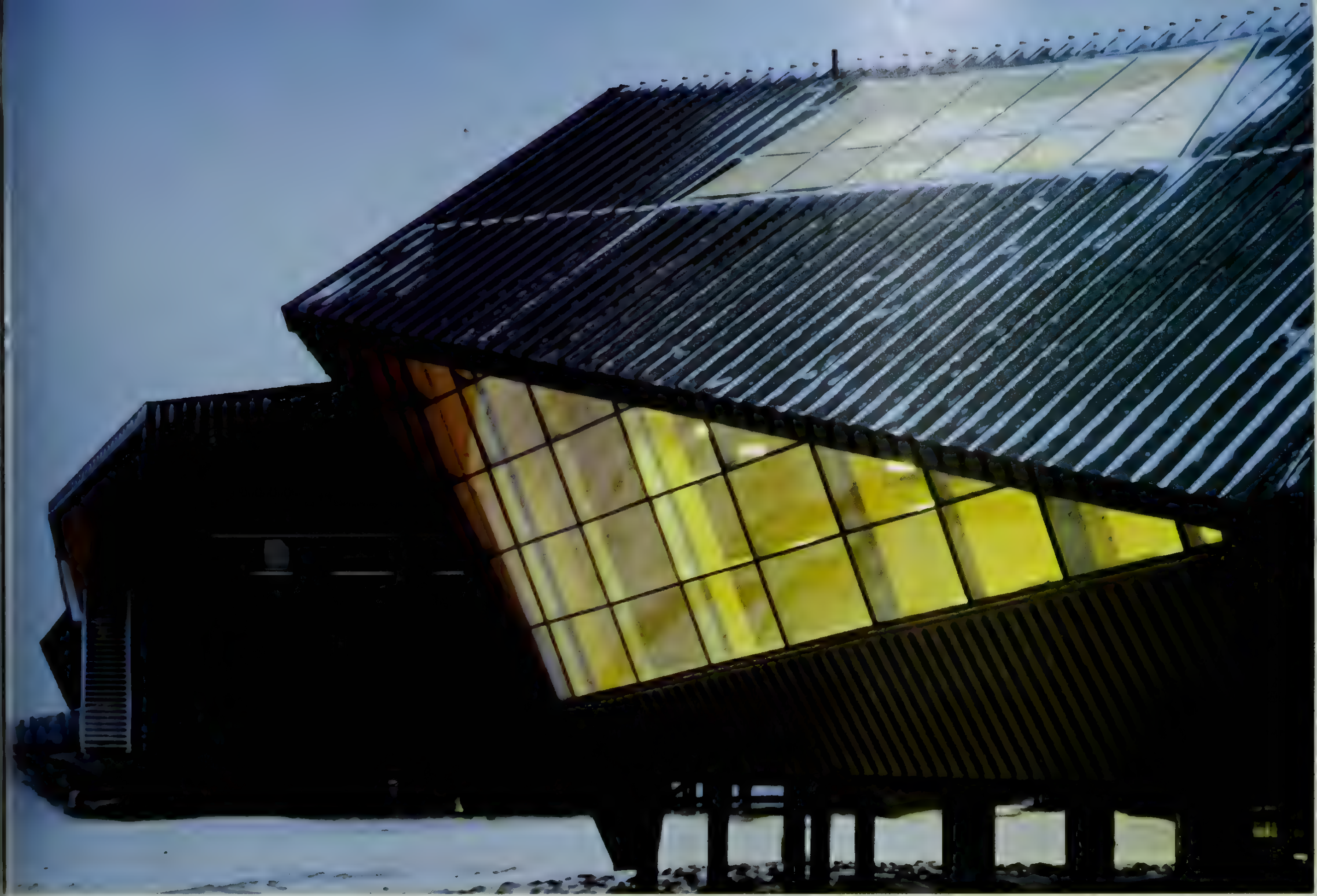
Peter MacKeith, a permanent resident of Finland, is associate dean of architecture at the Sam Fox School of Design & Visual Arts, Washington University in St. Louis. He writes frequently on Nordic architecture.

Project: *Svalbard Research Centre, Longyearbyen, Svalbard, Norway*
Owner: *Statsbygg/Directorate of Public Construction and Property*
Architects: *Jarmund/Vigsnæs Architects—Einar Jarmund, Håkon Vigsnæs, Alessandra Kosberg*
Engineers: *Frederiksen (structural); Monstad (electrical); Erichsen & Horgen (mechanical)*





The faceted, canted sur
faces of the building an
its elevation above the
permafrost are respons
to the cold, wind, and dr
ing snow that characte
much of Svalbard's
weather. Tested in a wi
tunnel, the volumes of
structure reduce wind
loads, lessen thermal
exchange, and deflect
build-up of snow drifts
(this page and opposite



ns present not only a daunting habitat for humans but pose a funda-
ntal, definitive question: Can one make an architecture here that goes
ond shelter or direct industrial use? Svalbard's stark setting positions
hitecture at its radical limits in nature—literally its degree zero of con-
tion and expression—and in this clarifying context, any architectural
ision must have an absolute value.

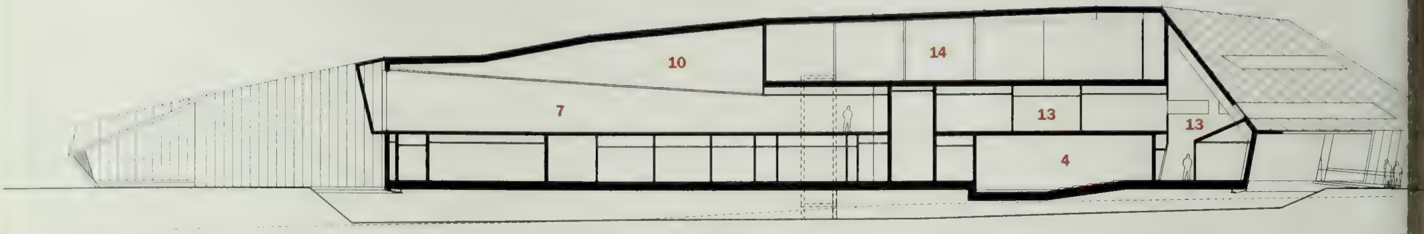
Oslo-based architects Jarmund/Vigsnæs designed the research
ility, known as the Svalbard Research Centre, keeping in mind that
ery commission should be unique with reference to its site and cir-
nstances." Their words resound in the faceted, glowing character of the
ilding. Sited on the shores of the Advent Fjord in Longyearbyen,
lbard's administrative center, the 91,500-square-foot complex expands
existing facility to accommodate a rapidly growing international fac-
y, staff, and student body, and to incorporate new museum spaces for
Svalbard History Museum.

Under the building's central "knot" of massive laminated spruce
ms supporting the roof of the museum's exhibition hall, exhibits
nonstrate the often tragic history of human inhabitation in the harsh
tic environment. Discovered by the Dutch explorer Willem Barents in
6, the archipelago was occupied by hunters of many nations for 300
rs, before coal mining operations began in 1906. Despite its sublime
uty, Svalbard's isolation—it is four hours by plane from Oslo—its six-
nth polar night, and intense cold and wind are constant conditions.
d, too, there are territorial polar bears.

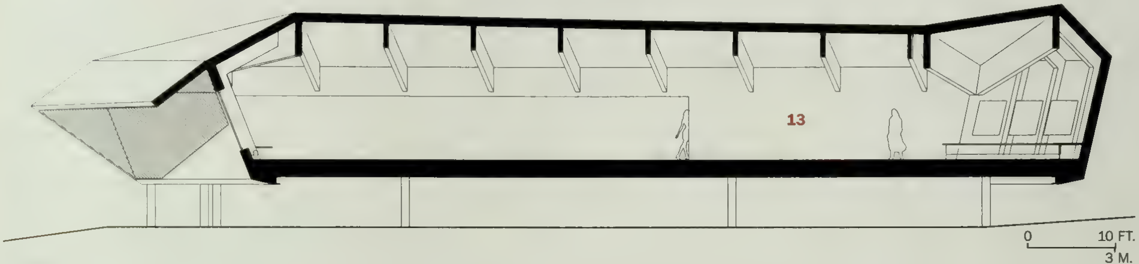
The immense north-facing glazed aperture of the building's
uce-paneled central atrium literally expresses the center's mission to observe and explore the arctic environment. Such a climate places an absolute premium on light, thermal control, and durability. Spruce-clad corridors radiate out from the atrium and its adjacent public auditorium, providing access to the faculty offices, laboratories, and classrooms for 300 students and 50 staff in four departments of arctic study—biology, geology, geophysics, and technology. Each corridor terminates in the research community's shared resources and gathering spaces: a research library, a dining facility (in the renovated portion of the earlier structure), large machine shops and storage areas, and the publicly accessible Svalbard History Museum exhibition hall. The separation of the program into thinner volumes or limbs (the body analogy is clear from an aerial view) produces the combined benefits of clear circulation and optimal natural light.

HERE, THE SIX-MONTH POLAR NIGHT AND INTENSE COLD AND WIND ARE CONSTANTS. SO, TOO, ARE THE POLAR BEARS.

In its external forms and internal planning, Jarmund/Vigsnæs's faceted and canted scheme suggests that performance and purpose constitute essential attributes of design, while historical or cultural meanings are secondary. When applied to the research center's unique set of circumstances, this methodology informed every aspect of the design process, as applied to site and context, choice of foundation, external cladding, the composition of plan and section, entrances, views, and light. It also informed the proportion of public or social space to private space,



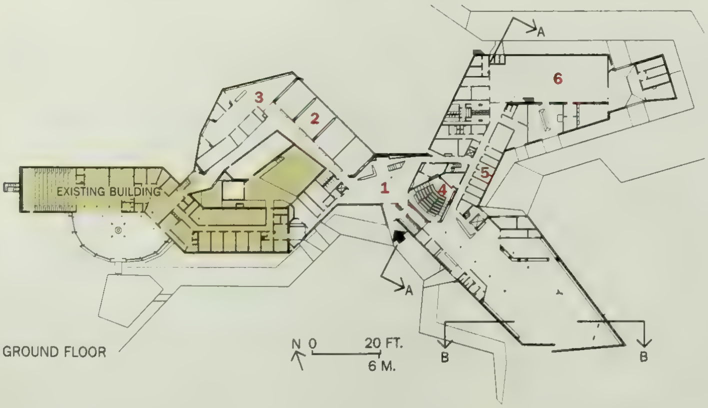
SECTION A-A



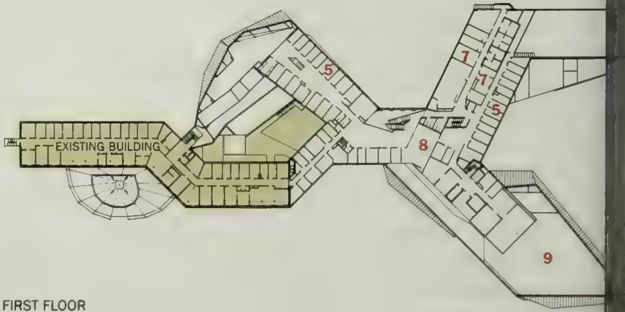
SECTION B-B

1. *Reception*
2. *Classrooms*
3. *Library*
4. *Auditorium*
5. *Offices*
6. *Storage*
7. *Laboratories*
8. *Computer lab*
9. *Historical archive*
10. *Technical "loft"*
11. *Ventilation*
12. *Rooftop platform for equipment*
13. *Museum*
14. *Technical rooms*

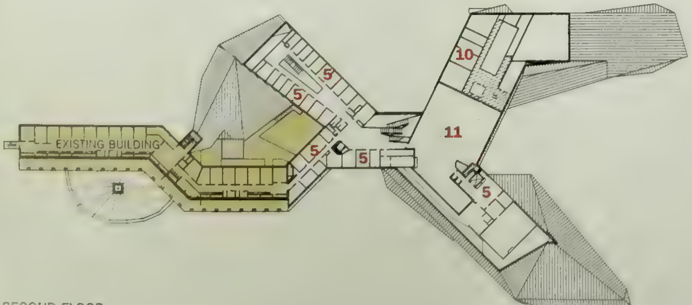
A stairway opens int
one of the canted, pi
clad corridors, which
feature slotted panel
on the ceiling to prov
ventilation (opposite
top). A north-faced
glazed wall brings lig
into the central stair
hall (opposite, botto



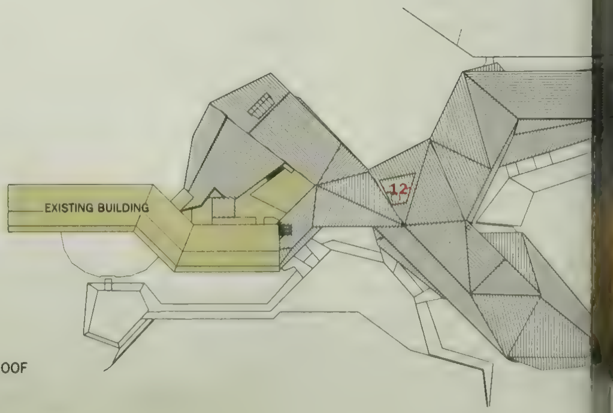
GROUND FLOOR



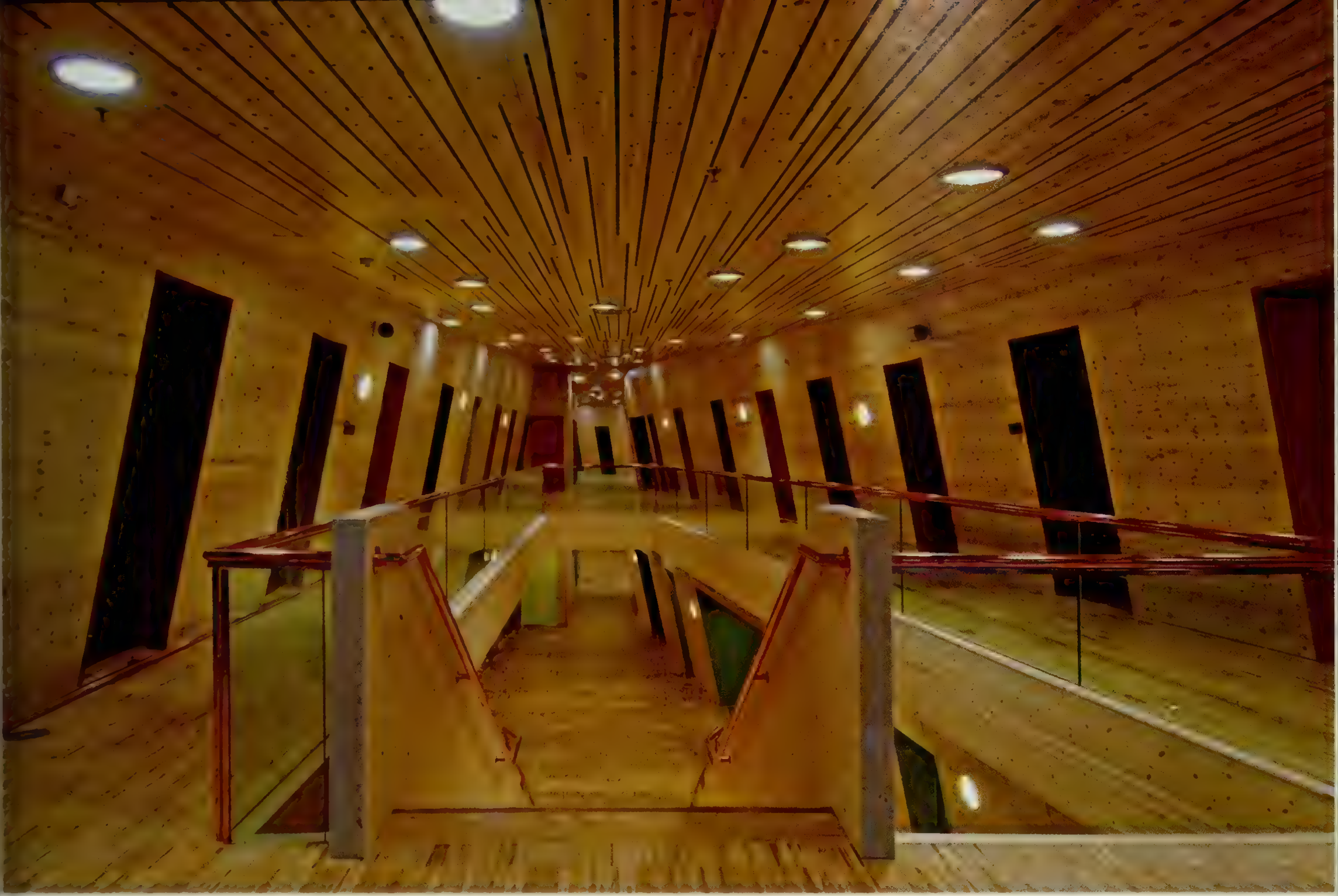
FIRST FLOOR



SECOND FLOOR



ROOF



and the choice of interior finishes and furnishings. As Håkon Vigsnæs describes it, "[The building] is an attempt to create an architecture totally suited to its setting, both mentally and physically."

Clearly the faceted forms of the complex reflect Svalbard's mountainous landscape and distant ocean sweep. Indeed, the sheer scale of the program and the dispersed character of the local community argued, in the architects' eyes, for its reference to be to the larger scales and forms of the landscape. But the angles and cants of its exterior formations just as equally derive from the specific, even scientific, environmental facts of wind patterns, snow drifts, solar angles, and permafrost conditions, rather than from a simplistic, preconceived idea of an "artificial landscape."

The tectonic complement to these environmental responses is the productive use of the constructed space in between—between the wings of the building, the rooms and walls, a ceiling and roof, a floor and a ceiling. The architects exploited this spatial "in between" at every scale of operation. For example, they suspended the mass of the building above the permafrost on 250 steel stilts (driven 36 feet into the ground). They differentiated programmatic elements into a multiwinged footprint, which results in shaping external courtyards as well interior spaces. The architects compressed numerous offices and laboratories into efficient short runs, and provided generously proportioned corridors and gathering areas. Lastly, and importantly, the designers neatly sandwiched mechanical systems inside interior partitions, and employed a ventilated roof construction with a thin outer membrane of standing-seam copper sheeting and a thicker inner ceiling of spruce paneling.

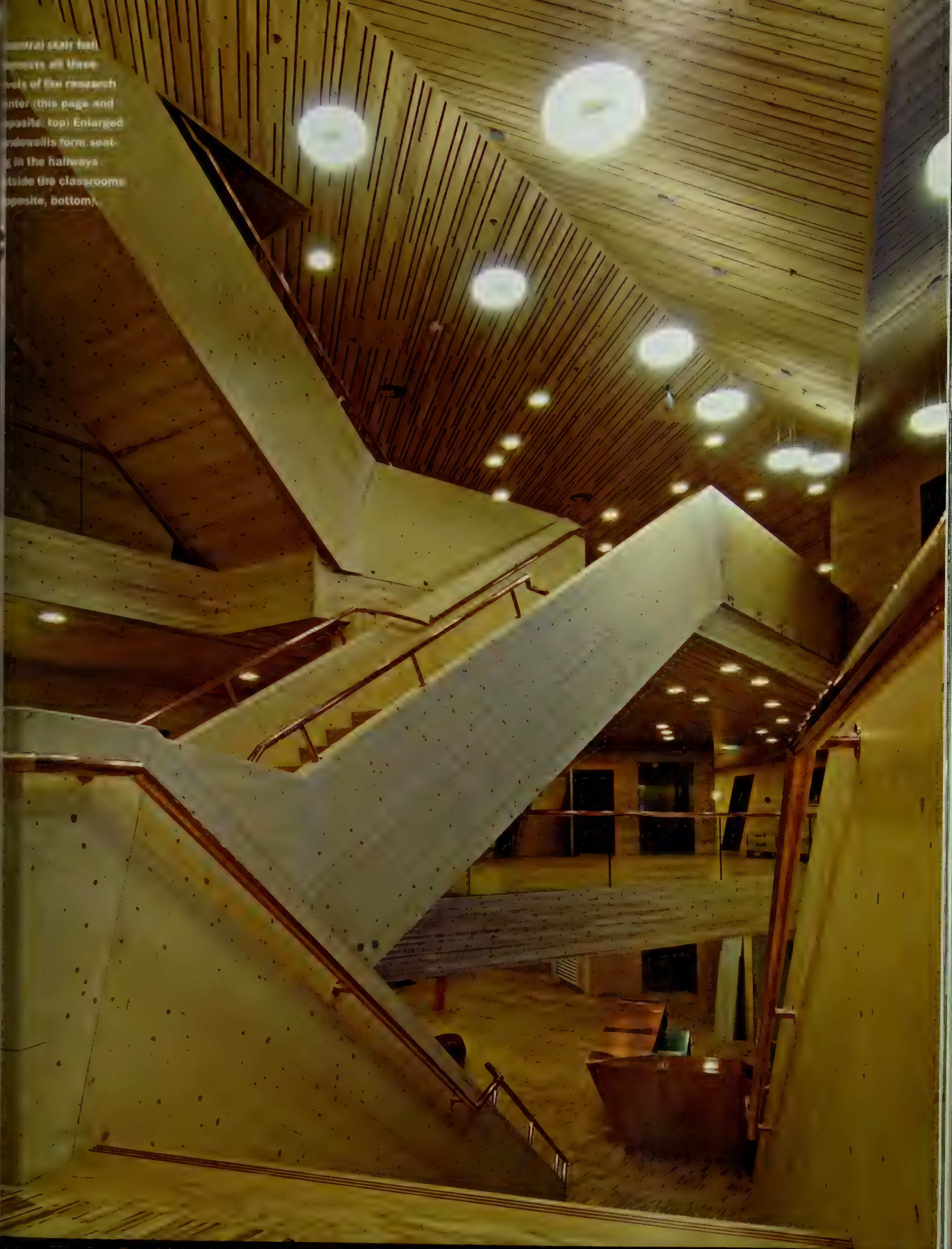
The Svalbard Research Centre's design, isolated on its arct
island, had to contend with material and production limits and cond
tions at every turn. All building products had to be transported to the si
by ship, and construction had to proceed during dramatic climate an
light changes. Fabrication techniques were a central element in desig
development, requiring the highest standards for performance.

Shaped by climate, light (and its absence), material resource
and our own perceptions of the arctic latitudes' regional character, th
center denotes an architecture of true North, as a contemporary incarn
tion of Kenneth Frampton's argument for a "critical regionalism
Frampton believed that such an architecture would be found in th
"interstices" of contemporary civilization. This project, at the edge of ou
conventional maps, is surely in a unique position, although the need f
expanding the facility and the increase in tourism on Svalbard will put th
project's isolation to the test.

The Svalbard Research Centre exemplifies research into desig
that performs at every scale, attentive to the essential dictates of climat
light, material resources, and human character. Here, the architect h
achieved an architecture of absolute value and fierce beauty. ■

Sources
Structural system: *Skanska*
Copper roofing: *Freitag*
Aluminum windows/doors: *Daaland*
Hardware: *TrioVing*
Elevators/escalators: *Kone*
Plumbing: *Mora*
Lighting: *Fagerhult; Glamox; Trilox*

For more information on this projec
go to Projects at
www.archrecord.com.



entral stair hall
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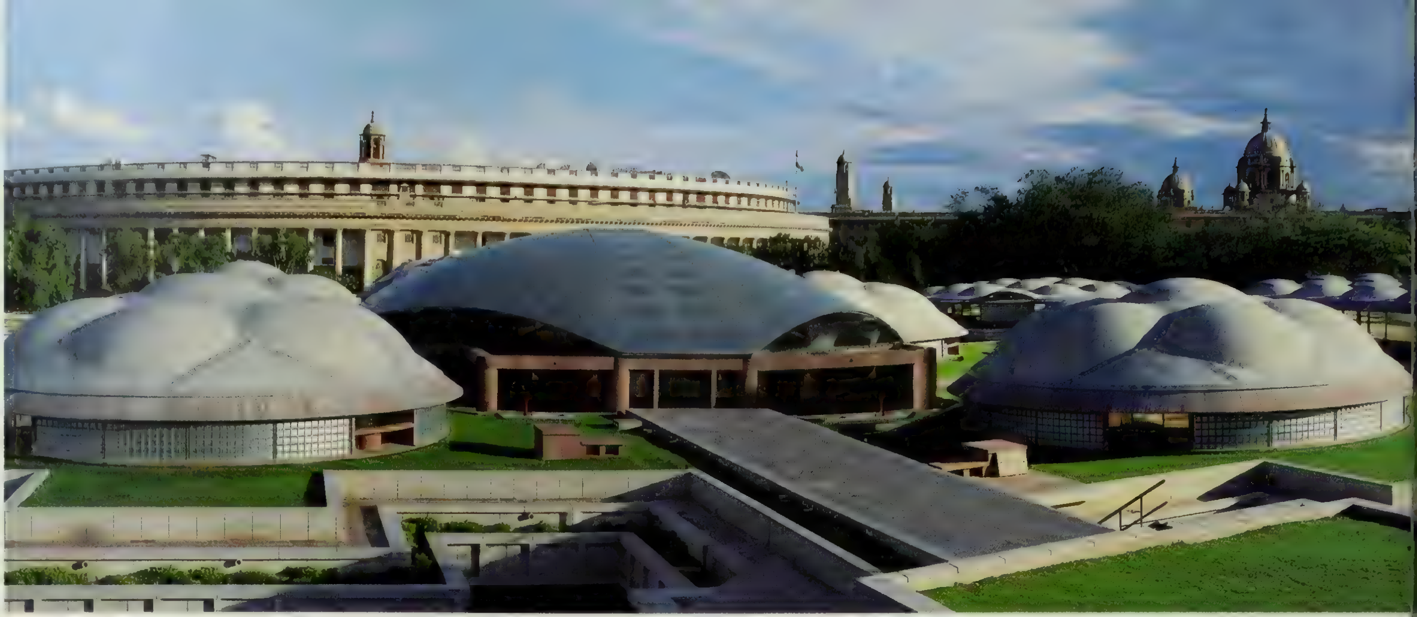
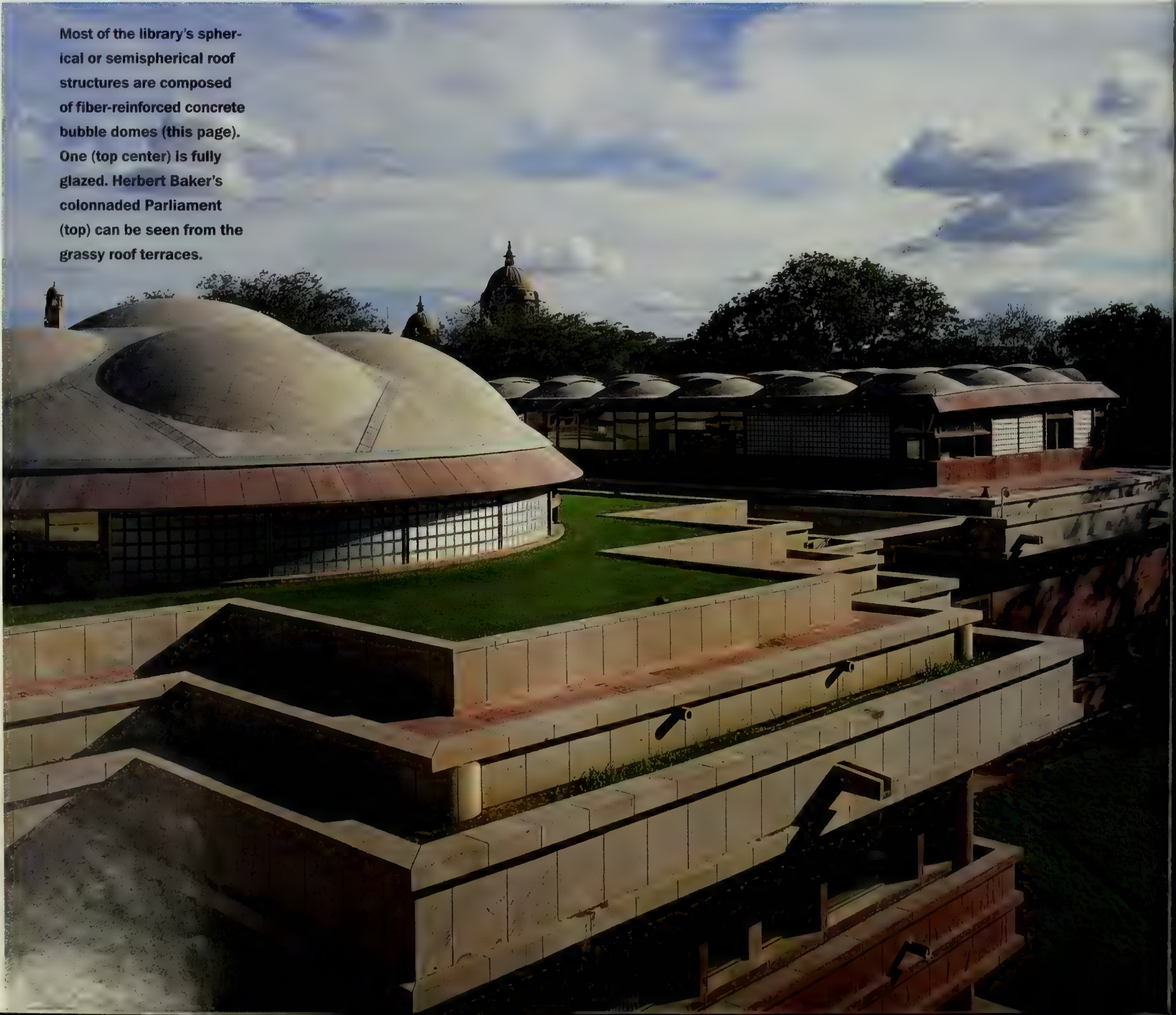
indowsills form seat-
g in the hallways
utside the classrooms
pposite, bottom).



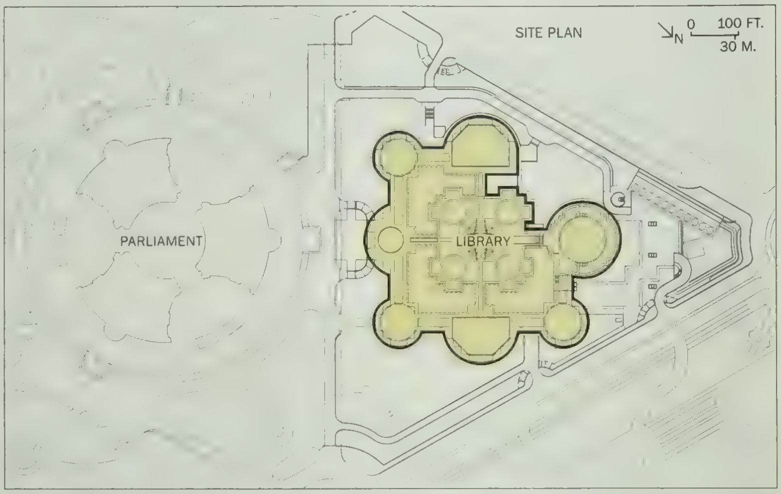
Most of the library's spherical or semispherical roof structures are composed of fiber-reinforced concrete bubble domes (this page). One (top center) is fully glazed. Herbert Baker's colonnaded Parliament (top) can be seen from the grassy roof terraces.



Raj Rewal Associates combines traditional and modern forms to create an original scheme for India's **PARLIAMENT LIBRARY** in New Delhi

Sam Lubell

Raj Rewal's Parliament Library, located in the heart of Sir Edwin Lutyens's and Herbert Baker's colonial New Delhi, is a hugely important project for India. This is especially true at a time when the country is rapidly veloping its industrial and information-technology sectors. t only does the library furnish vital research and meeting abilities for the government, but its architecture attempts to ablish an Indian identity within the once British imperial ital. The circular and rectilinear geometries of its plan, ms, materials, and decorative motifs recall the architectural trimony of Hindu, Jain, and Buddhist temples more directly n buildings by the early-20th-century British architects.



Since the library was designed by an Indian, who is apting traditional forms to modern technology and functions for the nbolically important site, Rewal's conscientious endeavor is very much tatement about the direction architecture should take here. Most new hitecture in the country is not based on Indian tradition, Rewal argues, t is rootless, and if anything obsessed with novelty, or, at the other end the stylistic spectrum, ends up being a "silly historical pastiche."

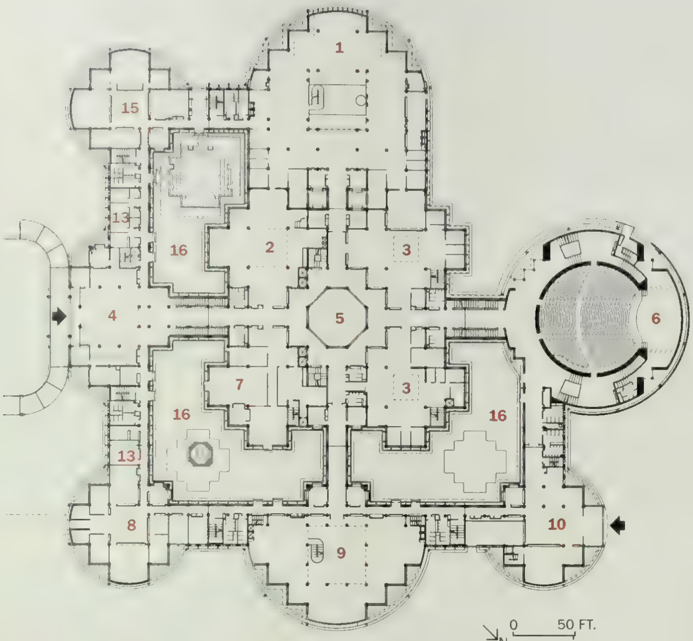
One of India's most established architects, Rewal has completed eral important projects in this city, including the World Bank Regional ssion (1993) and a campus for the National Institute of Immunology 88). But this $45 million, 590,000-square-foot complex appears by far be the high point of his career. It took more than a dozen years to real- : In 1991 Rewal won the commission for the much-needed addition to lia's Parliament—a Classical-style building designed by Baker in 1927. e program for the sprawling library called for offices, meeting rooms, d study spaces for members of the Indian legislature. As a major state ilding, it needed to express grandeur and solidity, but as a house of rning it also needed to be calming, quiet, and inspirational.

The triangular 10-acre site for the Parliament Library lies north Lutyens's Viceroy's House, now known as Rashtrapati Bhawan, the pres- ntial palace. Designed and built from 1912 to 1931 by Lutyens as the t of British imperial power (which existed until India's independence in 17), its arresting architecture is often referred to as Delhi Classic, owing its monumental forms and Mughal motifs. Today the palace and stately vernment buildings, plus the streets, such as the expansive, tree-lined path, form a cohesive urban context that Rewal had to address in designing the Parliament Library. Included in his considerations, of course, was the Parliament on an adjacent site. One of this precinct's most notable buildings, Baker's round, white-granite Classical structure sits atop a red sandstone base and is surrounded by an extensive colonnade.

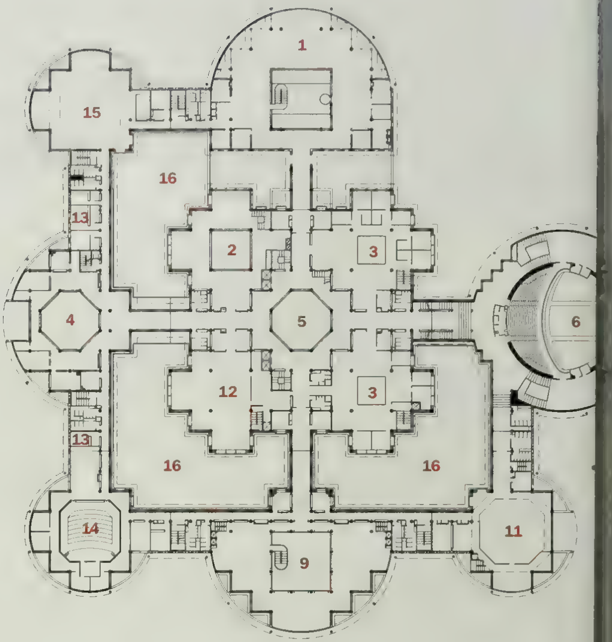
Bowing to Baker's circular building, Rewal's four-level complex, with two floors below grade, features a cluster of spherical and semi-spherical forms, organized axially around an incomplete square. The low-rise library defers to the Parliament, says Rewal, and speaks to it "as a guru gives advice to the king." The dominant use of red, white, and pink sandstone blocks, cladding a concrete frame, allude to the Parliament's red base, while its round composite stone-and-steel or concrete columns are reminiscent of the colonnade.

Traditional forms, like *jaalis*, or ornamental screens, rhythmically articulate much of the otherwise minimal exterior, as do the sandstone mullions. Both the mullions and stone *jaalis* were manually carved off-site by artisans in nearby Rajasthan. The facade's heavy sandstone blocks and

Project: *Parliament Library, New Delhi, India*
Owner: *Government of India*
Architect: *Raj Rewal Associates—Raj Rewal, principal; Arvind Mathur, Anshu Mahajan, H.S. Sandhu, Sanjeet Bose, Pratap Talwar, Arun Rewal, Ankur Mathur, Vipin Thakur, design team*
Engineer: *India Central Public Works Department (CPWD); R.F.R. Engineers (for domes)*
General contractor: *Larsen & Toubro*
Consultants: *Satish Khanna (landscape); CPWD, Satish Khanna (lighting); CPWD (acoustical)*



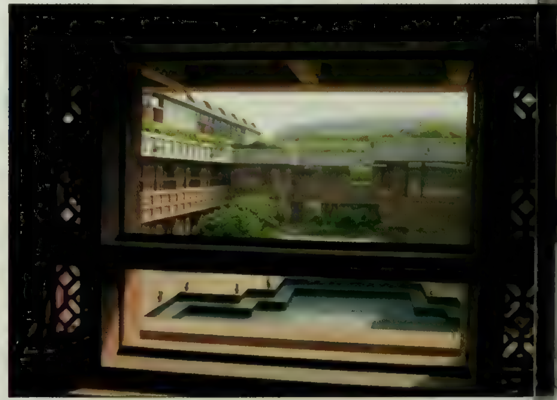
GROUND FLOOR

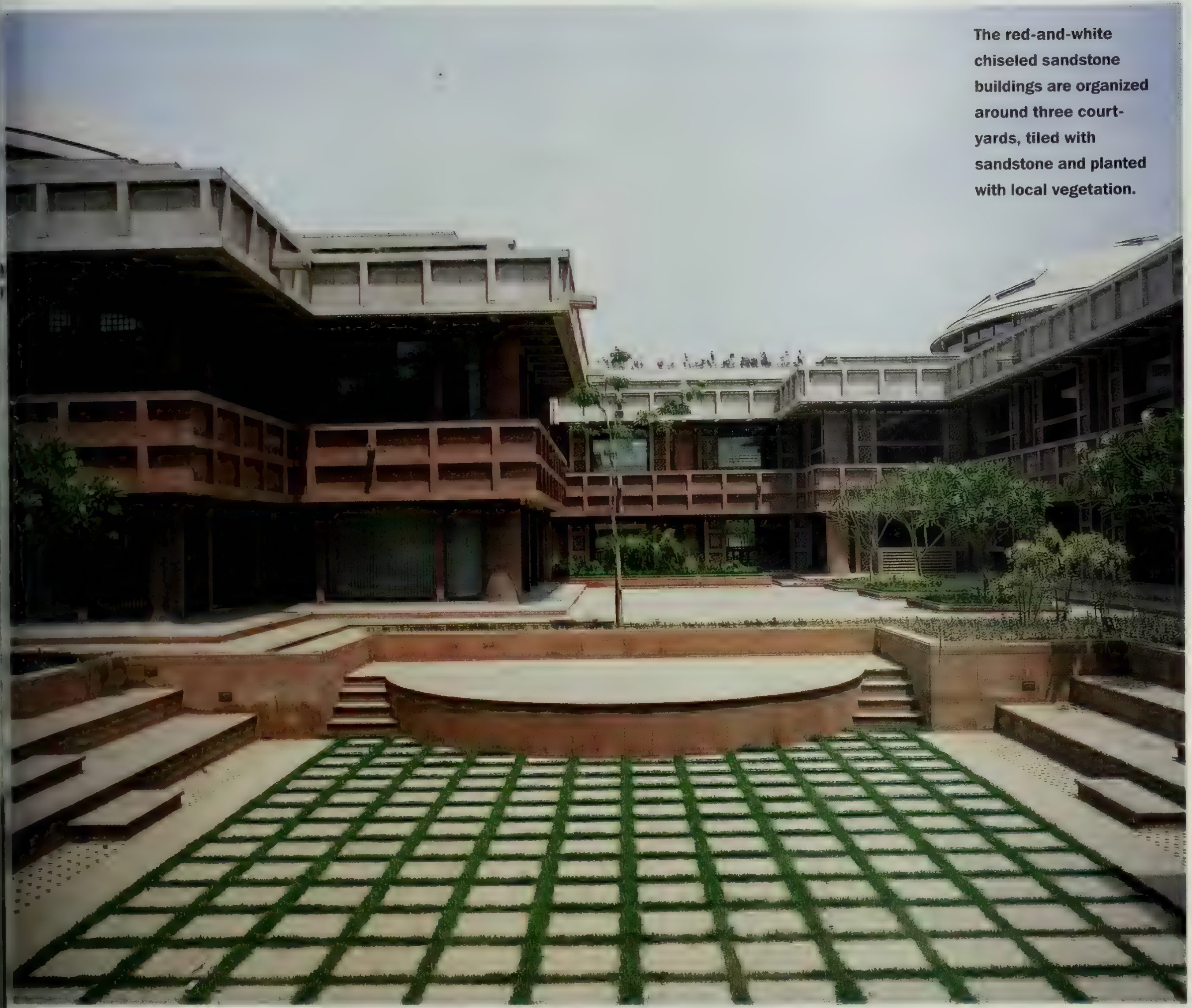


FIRST FLOOR

1. *Scholars' library*
2. *MPs' reading room*
3. *Research and archives*
4. *Entrance atrium*
5. *Center atrium*
6. *Auditorium*
7. *Committee room*
8. *Press center*
9. *Digital library*
10. *Public reception*
11. *Cafeteria*
12. *Banquet hall*
13. *Offices*
14. *Conference space*
15. *Security*
16. *Courtyard*

Red sandstone clads the building's exterior (below left). Narrow halls (below and bottom) are infuse with light filtere through window stone screens.





The red-and-white chiseled sandstone buildings are organized around three courtyards, tiled with sandstone and planted with local vegetation.

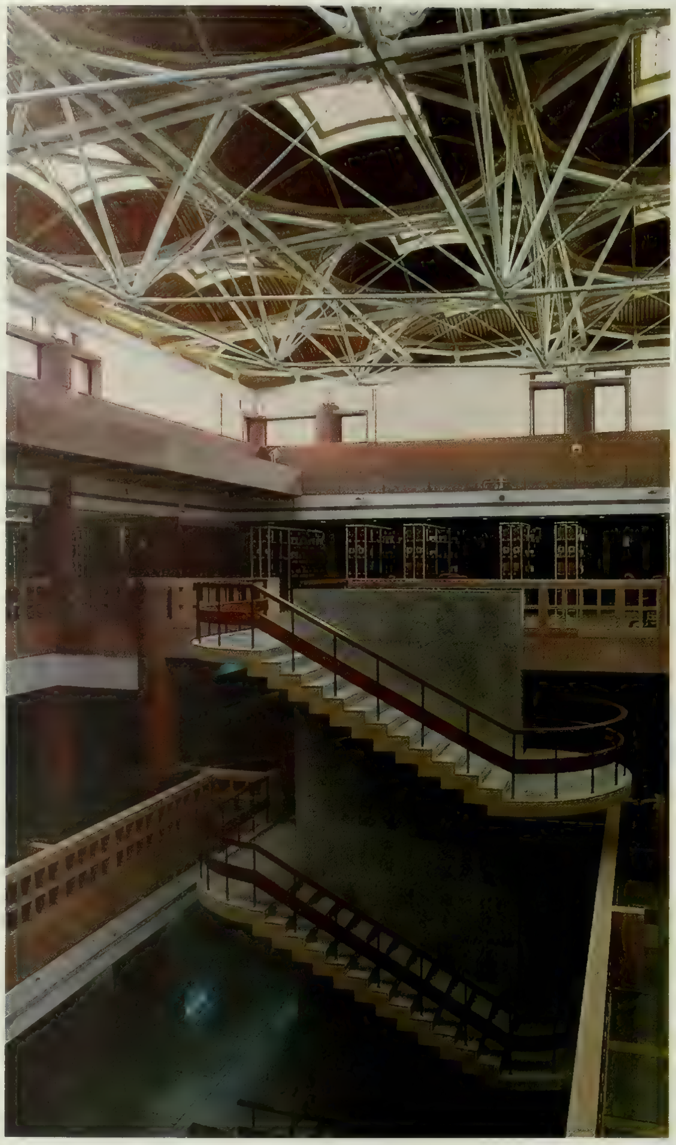
all openings help shield the interior from the region's intense heat,
ich can rise to an average of 113 degrees in the summer. Also providing
de are the overhanging gridded cornices of white sandstone and grid-
l midlevel bands of red sandstone surrounding interior courtyards.

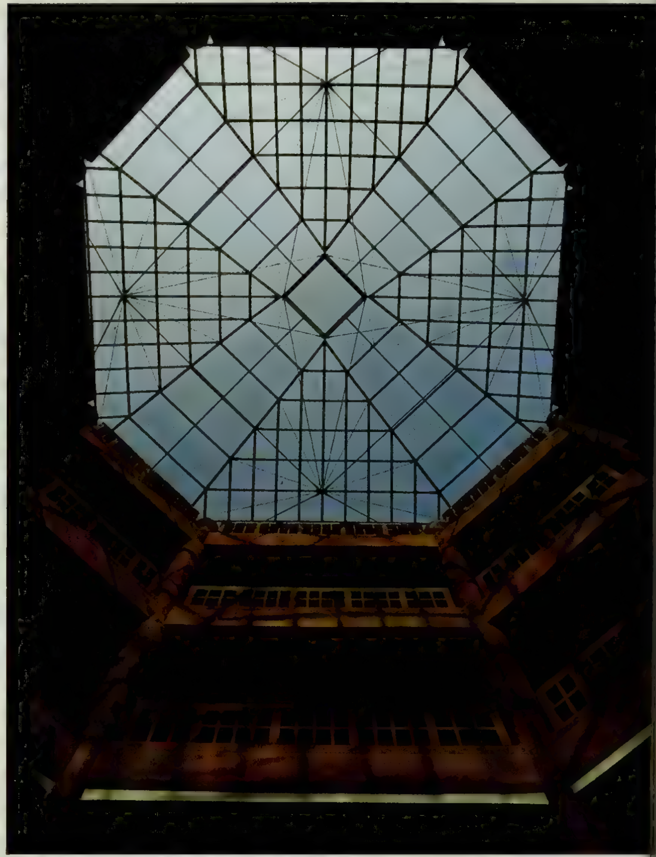
The basic plan, where a series of interior courtyards link the dif-
nt structures, evokes the interpenetration of indoor and outdoor spaces
recolonial temple complexes, including the 15th-century Jain Adinatha
ple in Ranakpur, and Fatehpur Sikri, the majestic Mughal sandstone city
Uttar Pradesh, built in the 16th century. The three courtyards, paved with
dstone tiles, subdivided by steps, and enclosed with low walls, are planted
h local vegetation. Each space is intended to offer different symbolic
anings to its users. One courtyard's open-air theater is meant to provide
rum for debate. In another courtyard, ficus trees stand for social justice;
third, a basin of water is an ancient symbol for equality.

But perhaps the building's most dramatic feature is the extensive
of bubble domes to cover the major spaces. The fiber-reinforced con-
e shells for the bubbles were precast on-site. Resting on an armature of steel ring beams and lattices formed from tubes, castings, and high-tensile tie bars, the roof system well demonstrates the extent to which modern technology is incorporated into this structure. Traditional materials also play a part: Surfaces of the domes are generally finished in polished sandstone or granite roof tiles, while the octagonal, hexagonal, or square components of the domes inside are often surfaced in terra-cotta, wood acoustical tiles, or teak battens.

Sandstone walls prevail in many of the rooms, which include a digital library, the scholars' library, an MPs' reading room, plus reception rooms, banquet halls, and a 1,400-seat auditorium. The multiheight spaces naturally are dramatic; but even the corridors, surfaced with marble or granite floors, exude a mysterious presence, since they are darker, but infused with a light filtered through syncopated openings. Such controlled light seen throughout the building can have a mesmerizing effect. "The longer you linger, the more you start to notice," says Rewal.

In the domed halls, daylight enters through clerestorylike bands of glass brick, and in some cases glazed brick panels inserted in the roof.





The three-level scholars' library is flooded with light (left), where panels of glass bricks are inserted into domical shells supported by a structural-steel lattice. The five-story central atrium's glass dome (above) spans 82 feet. The central dome, where glass "petals" are linked by four glazed ladder purlins, is formed from stainless-steel structural members, tensile rods, and layers of laminated reflective and clear glass.

Your eye is drawn upward, fostering, Rewal hopes, the sense of enlightenment you might experience in an Indian temple. The library's central dome, spanning 82 feet over a five-story hall, is entirely glazed: to counter the heat gain, the panels are composed of a top layer of reflective glass laminated over clear float glass and separated by an air space from another layer of laminated glass. The dome's framework of stainless-steel tubes in the form of parabolic petal-shaped segments linked by ladder purlins dramatically introduces light to the interior, creating a memorable central hall for the entire complex.

With its spatial variety, historical references, and solid materiality, the library lives up to its significant role as the newest addition to India's governmental buildings. The large open spaces, lofty domes, and carefully controlled natural lighting lend it a sense of majesty and calm. Still, Rewal's architectural vocabulary can seem strangely dated to a Westerner used to a more abstracted type of monumentality. For example, conference rooms and banquet halls patterned with brownish or maroon stripes and large circular motifs in marble resemble Late Modernist designs of the 1960s. The bubble domes recall visionary schemes of t
1950s (even if the array of domes, viewed from the building's gra
rooftops, are strangely exhilarating). For this reason, several Indian arc
tects, in private conversation, have criticized Rewal for not moving t
country's architecture forward. And while the building's heavy exter
responds to the area's hot climate, the effect is sometimes ponderous—
if it were a fort, not a government building. Because of its lack of vis
focus, the facade appears much less inspiring than the interior. Still, su
drawbacks do not destroy the overall effect. Like much of India, the bui
ing feels blessed with the richness and poetry of history, but is still infus
with the exuberance and complexity of modernity. ■

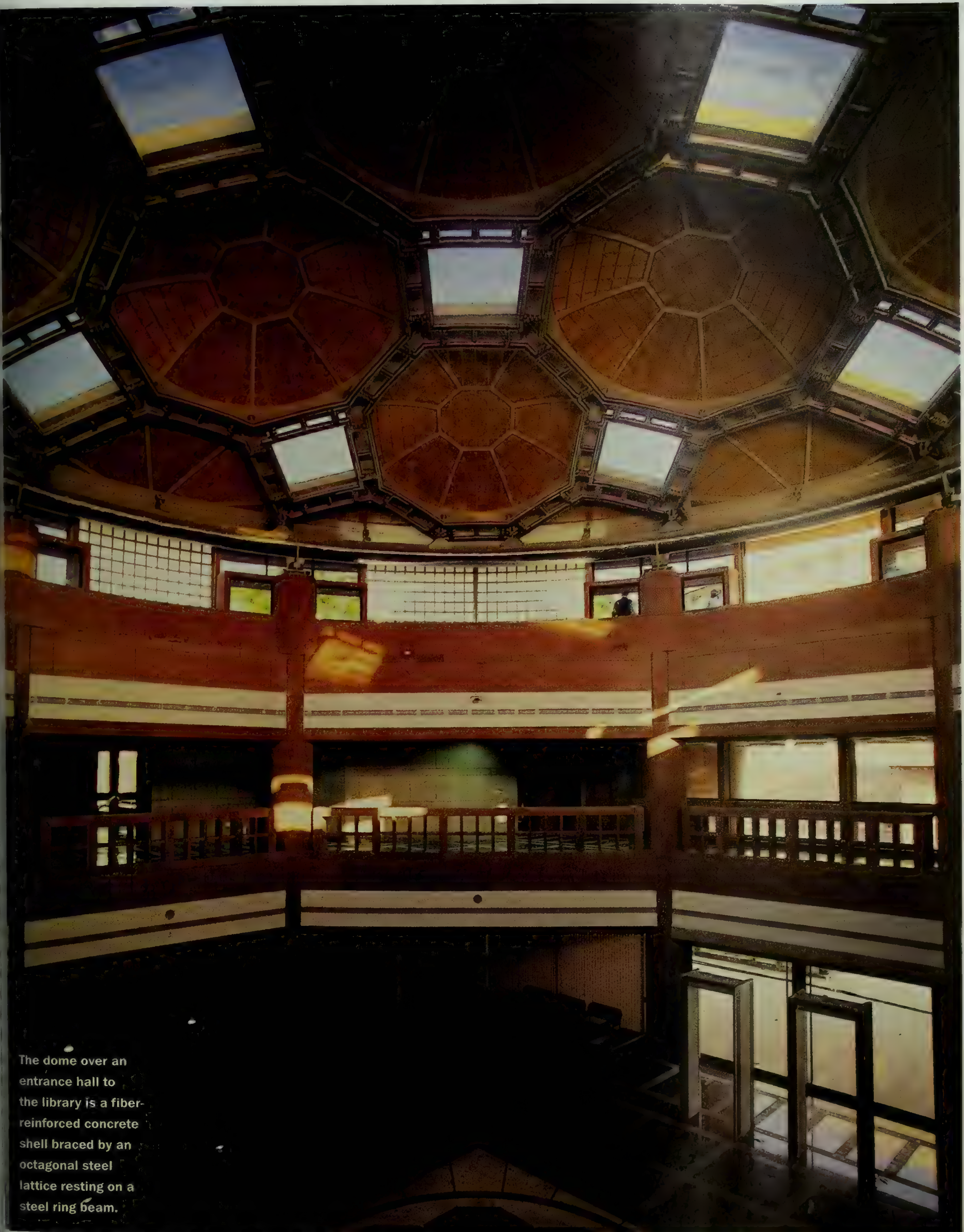
Sources

Concrete: *Larsen & Toubro*

Windows: *Mahavir Aluminium*

Steel: *TATA; Steel Authority of India (SAIL)*

For more information on this proje
go to Projects at
www.archrecord.com.



The dome over an entrance hall to the library is a fiber-reinforced concrete shell braced by an octagonal steel lattice resting on a steel ring beam.

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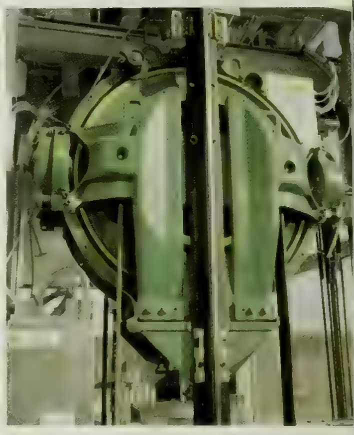

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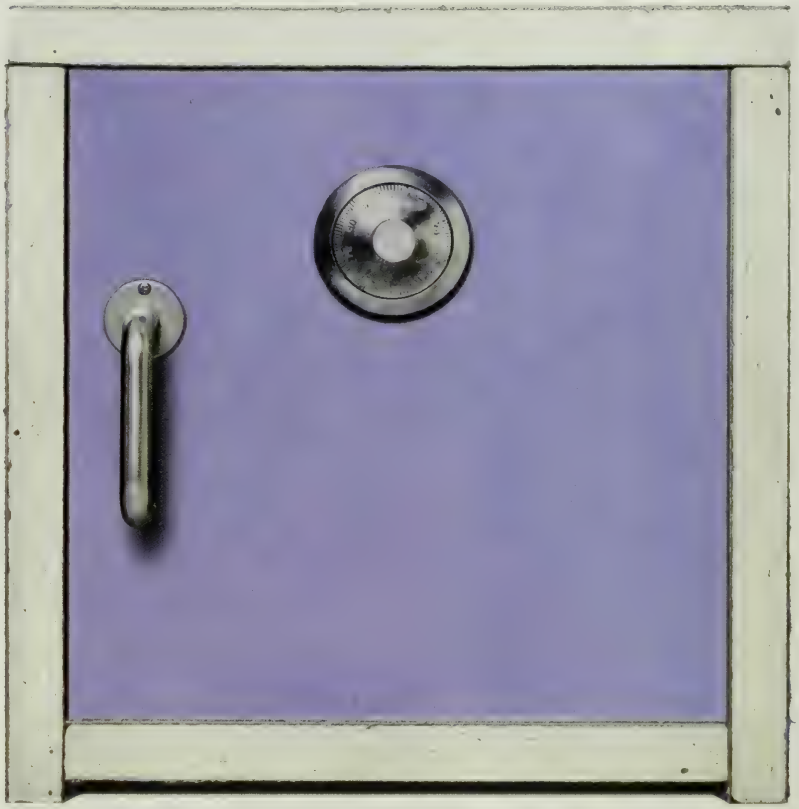

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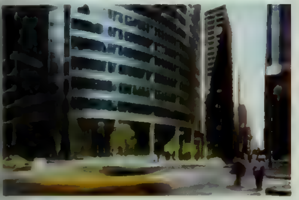
Culture Clash

AMERICAN ARCHITECTS TWEAK OLD NORMS TO CREATE AMENABLE OFFICES IN LOW-RISE BUILDINGS AND SKYSCRAPERS, HERE AND ABROAD.



1.

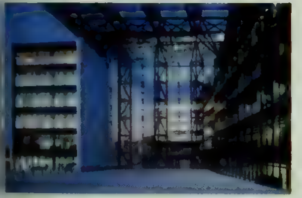
Chicago, Illinois

Pei Cobb Freed made sensuality out of the Hyatt Center's hard-nosed brief. SOM carved out an elegant atrium within.

2.

New York City

Studios Architecture used luscious colors and a curved, daylit reception space to enliven Bloomberg's new offices and studios.



3.

Madrid, Spain

Kohn Pedersen Fox and Rafael de La-Hoz stretched a high-tech patio roof to conserve the electric utility Endesa's energy—and urbanity.

4.

Wilmington, Delaware

Kling stylishly revised the bleak office-warehouse norm for E.J. DeSeta with a structure that adeptly serves two diverse businesses.

5.

Munich, Germany

Murphy/Jahn redefined spec in a pair of technically sophisticated energy-efficient towers united by clip-on bridges.

more information on these projects, go to Building Types Study at w.archrecord.com.

By James S. Russell, AIA

On the following pages, the two European buildings we feature—their American design heritage notwithstanding—essentially could not be built here. Nor would our three American contenders, worthy though they are, be legal in much of Europe. The two architects who had worked in both continents explained the disparity.

The key difference is the European focus on energy conservation and reduction of pollutants that promote global climate change, said Lee Polisano, who led Kohn Pedersen Fox's London office in the design of Endesa, in Madrid. None of the requirements are permitted to come at the cost of occupant comfort, added Helmut Jahn, designer of the Highlight Munich Business Towers. That so many projects are awarded by competition, Jahn adds, encourages architects to innovate. The Munich scheme pleased his clients because he got the performance of costly and complex double curtain walls into a triple-glazed single layer. Projects deemed green by American standards would probably fall short of tightening code requirements in much of Europe. Custom components tend not to be prohibitively expensive in Europe but are here, which makes it much more difficult to innovate.

The three American projects focus on development values in the U.S.: speed, low cost, and layouts of predictable efficiency. Harry Cobb stretched the standard square plan of the center-core downtown office tower into a long lozenge at the Hyatt Center in Chicago, economically opening more of the building to daylight and views. Studios Architecture worked out a preconstruction arrangement for the spec building Bloomberg tenanted in New York that resulted in high ceilings to commodiously accommodate the dense, trading-floor ambience innate to the company's culture. The lesson? "People don't all work the same way anymore," says Polisano, an idea, he adds, better understood in Europe. The diminutive E.J. DeSeta building adopts a narrow, "European" floor plate—bathing its occupants in daylight and views from all sides.

Although Polisano is concerned about the implications of an America that's falling behind on environmentally sensitive design, he does not see a European model triumphing—yet. "I see a North American model, an Asian model, and a European model. Asian buildings are fitted with the latest technology available on the operational side, if not the environmental side. The emerging Asian model may hybridize the American and the European one."

Economics will force the European model to reflect more of the speed and cost advantages of North America, he predicts. "It's a brave new world." Indeed. ■

Hyatt Center
Chicago, Illinois

1

PEI COBB FREED MAKES SENSUALITY OUT OF A HARD-NOSED BRIEF; **SKIDMORE, OWINGS & MERRILL** CARVES OUT AN ELEGANT ATRIUM INSIDE.

By Blair Kamin

Architect: *Pei Cobb Freed—Henry N. Cobb, George H. Miller, Michael D. Flynn, Brian P. McNally, John L. Sullivan, Que Ranne Rhee, Fintan Dunne, Julie Eng*
Architect of record: *A. Epstein and Sons International—Michael Damore, Thomas Scheckelhoff, Scott Marker, Weng Foong, Michael Mueller*
Interior architect: *Skidmore, Owings & Merrill (Pritzker spaces)—Stephen Apking, Nada Andric, Judy Fletcher Betts, Konstantin Buhr, David Davis, Peter Magill, Cynthia Mirbach, John Pickens, Elisabeth Rogoff, Annika Teig*
Client: *Higgins Development Partners*
Consultants: *Halvorson and Partners (structural); Environmental Systems Design (m/e/p); A. Epstein and Sons (civil); Peter Lindsay Schaudt Landscape (landscape); Weidlinger Associates (blast)*
Contractor: *Bovis Lend Lease*

Size: *1.75 million square feet*
Cost: *Withheld*
Completion date: *2005*

Sources
Curtain wall: *Permasteelisa*
Glass: *Viracon*
Stone: *W. R. Weiss Stone Systems*
Entrances: *Crane*
Blinds: *Hunter Douglas*

For more information on this project, go to Building Types Study at **www.archrecord.com**.

Chicago often seems positively Calvinistic in its devotion to the box, but things are loosening up. From various perspectives, the sleek stainless-steel-and-glass walls of the Hyatt Center suggest a very tall ship cruising gracefully through space. Call it the S.S. Pritzker, since it was codeveloped by the billionaire Chicago family that each year awards the Pritzker Prize and owns the worldwide Hyatt Hotel empire that is headquartered inside. In this, Chicago's first post-9/11 skyscraper, architect Henry Cobb, FAIA, of Pei Cobb Freed, has deftly integrated the new need for heightened security with his long-standing notion of "skyscraper as citizen."

Program

The Pritzkers originally hired Foster and Partners to design a corporate headquarters with a lavish budget. But the day after the 9/11 attacks, Penny Pritzker, president of the Pritzker Realty Group, told Foster that the prospect of a major downturn in the hotel business made proceeding with his ambitious design impossible.

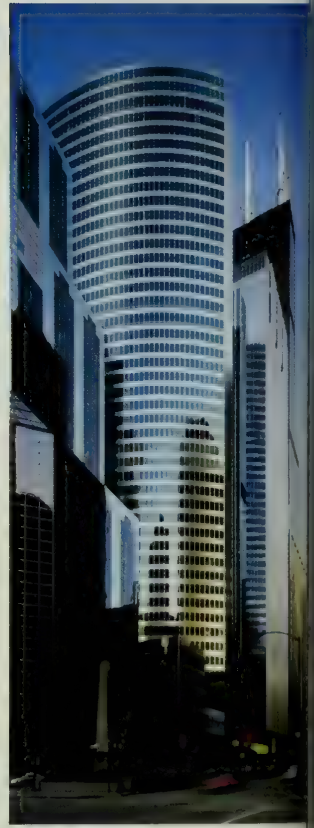
The Pritzkers and codeveloper Jack Higgins turned to Cobb, requesting a no-frills building that would be shared with other tenants. The brief: column-free, 33,000-square-foot floors, with 45-foot spans from exterior wall to core. Cobb was given four weeks to fashion a schematic design. Recalling the tight schedule, he quotes the British philosopher Isaiah Berlin: "My brain is like a taxi—it responds when hailed."

Solution

Visiting the site, a block-long, rectangular plot a bit north of the Sears Tower, Cobb immediately discerned the advantages of an elliptical plan. Not only would it create a distinct skyline presence, it would open its floors to more expansive views than the typical block-filling box. The plan would eliminate the corner office, an icon of corporate hierarchy that a prospective tenant didn't want.

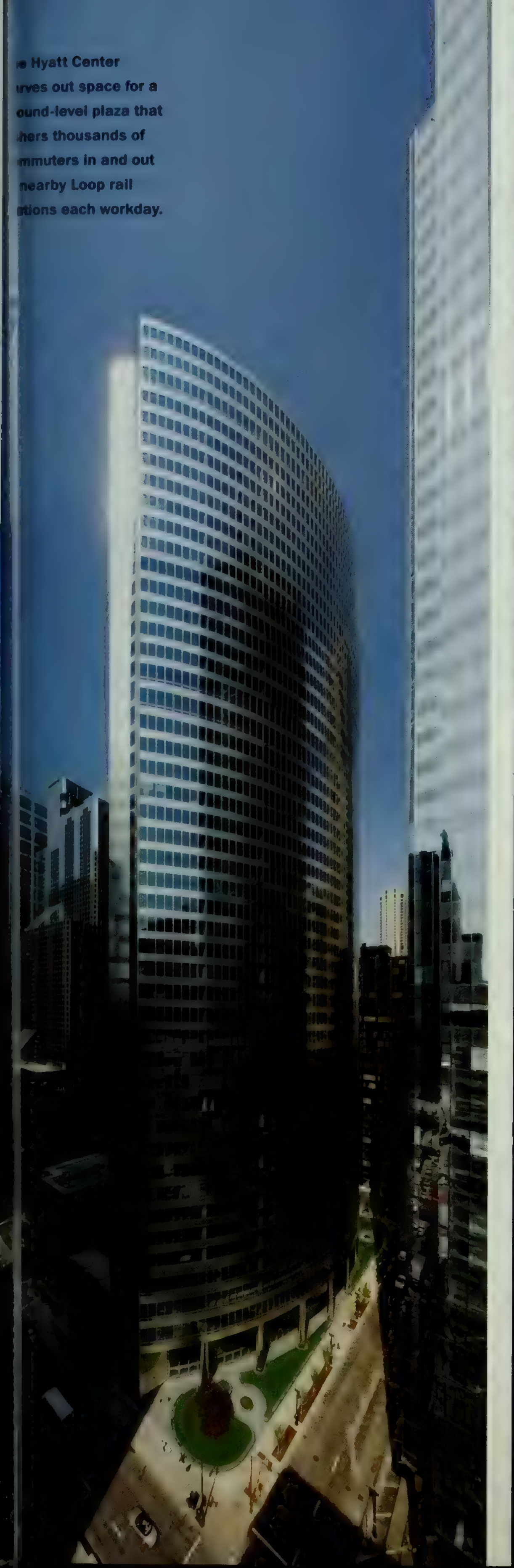
The sole modification to this diagram was a six-story, rectangular bustle attached at the base that created 51,000-square-foot floors to accommodate trading rooms for a financial-business tenant, Goldman Sachs. The low block felicitously improved the proportions of the steel-framed tower.

The tower's crisply handled long elevations, with their windows set flush with the luminous, linen-patterned, stainless-steel spandrels, were created from cost necessity as much as aesthetics. "Let's face it," says Cobb, "if you're doing a budget building, keep it smooth." The striking verticality of the end walls, with their nearly solid splaying surfaces of stainless steel, counters the dominant horizontality of the long elevations. The visible tension in the tau bulging skin administers the right dose of Chicago toughness.



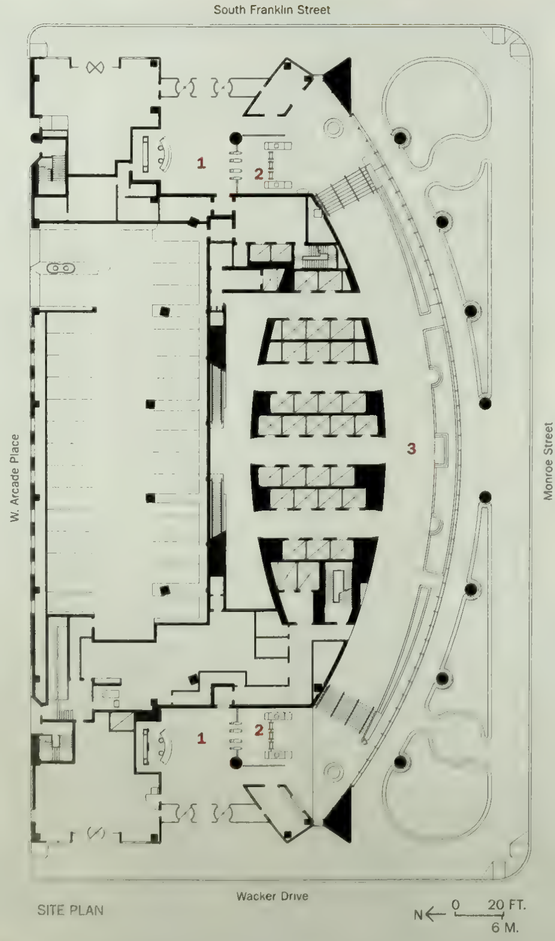
Cobb discreetly heightened security using free-form, granite-cla planters on the plaza, shaped with Chicago landscape architect Peter Schaudt. They echo the tower's curving geometry and invisibly do double-duty as barriers to the intru

Blair Kamin is the Pulitzer Prize–winning architecture critic of the Chicago Tribune.

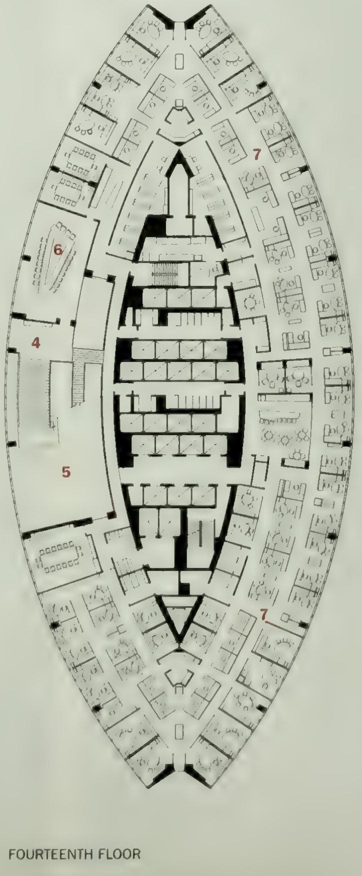


e Hyatt Center
arves out space for a
ound-level plaza that
hers thousands of
mmuters in and out
nearby Loop rail
ations each workday.

For security, the columns of the monumental colonnade (opposite, top left) are concrete-encased inside their metal skins. The high, glass lobby walls are blast-resistant. Low entrance canopies at the junctur of the tower and the low "bustle" (left and lobby plan, below) balloon upward to 50-foot-tall, skylit vestibules accented with wall panels by British artist Keith Tyson (opposite, top right). Moving through a broad but low metal-detector zone, visitors arrive in the main lobby (opposite, bottom), with its tall bamboos augmented by soothing bubblers.

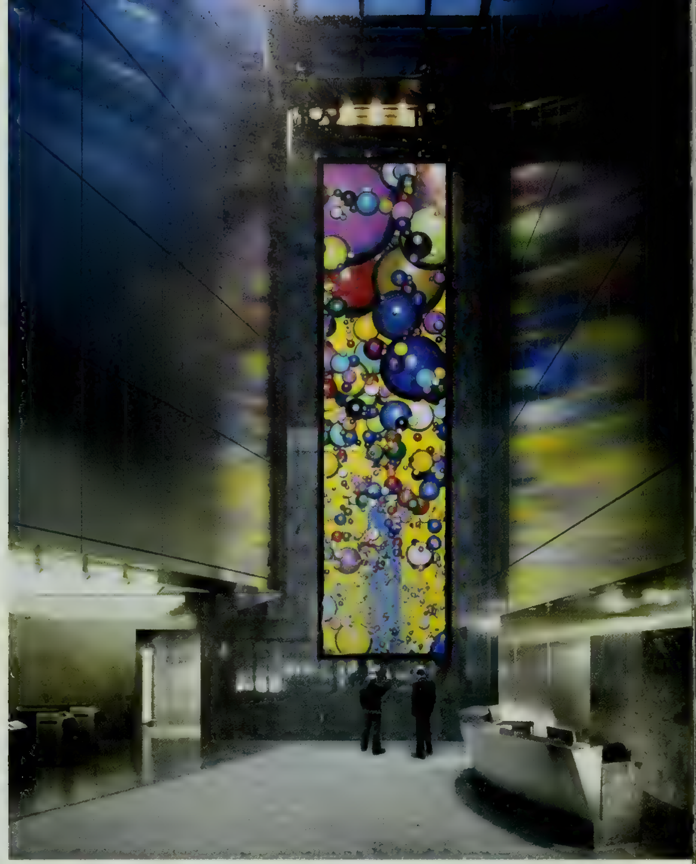


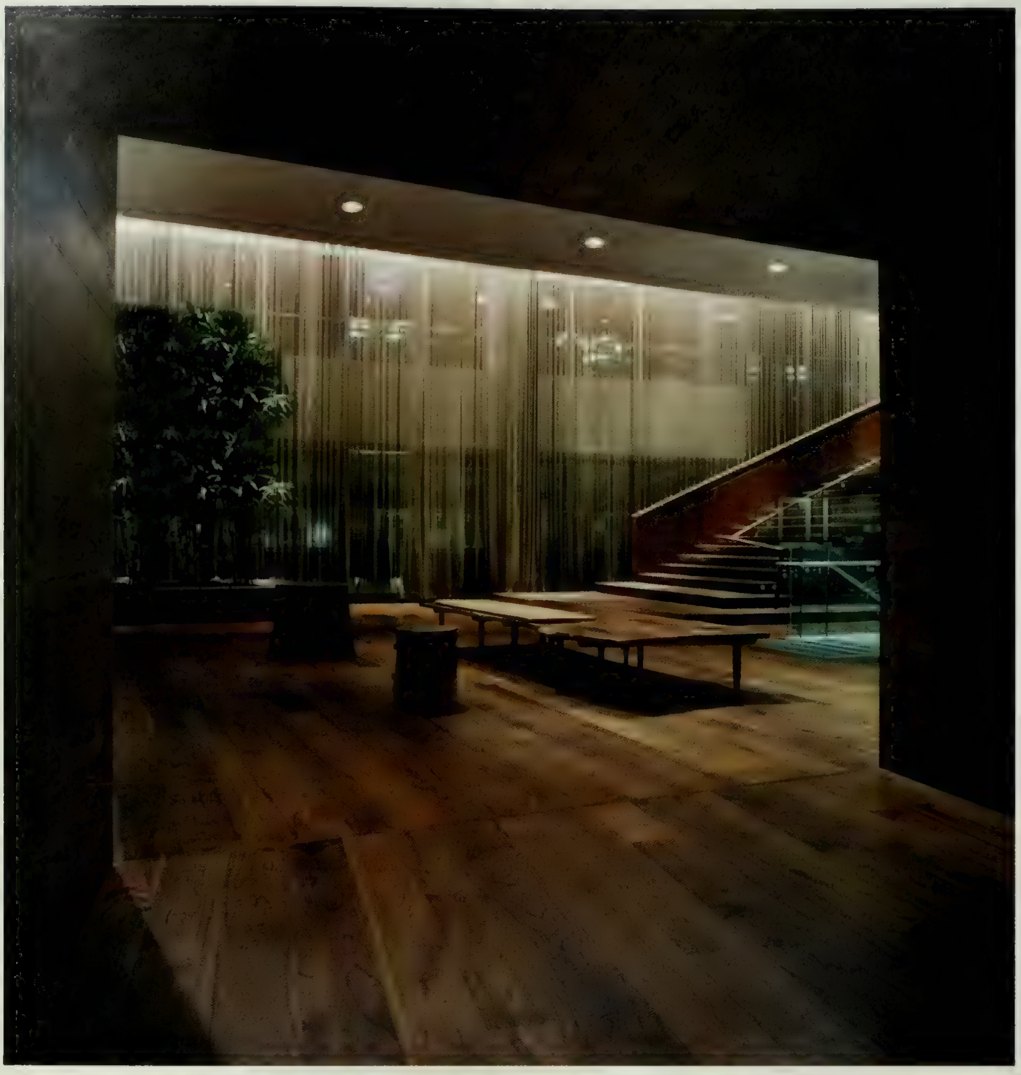
SITE PLAN



FOURTEENTH FLOOR

1. *Vestibule*
2. *Metal detectors*
3. *Lobby*
4. *Atrium*
5. *Reception below*
6. *Boardroom*
7. *Offices*





sion of bomb-laden vehicles. Cobb realized that post-9/11 security demands need not clutter lobbies with hastily conceived metal detectors. Instead, he shaped a richer processional sequence, playing a spatial game of “compress and release” (see pages 133 and 134)

The most architecturally signif cant floors within the Hyatt Center house the offices of the Global Hyatt Corporation and Classic Residence by Hyatt, for senior livin on floors 9 through 16. An atrium, evoking its counterparts in Hyatt's hotels, ties the floors together, wit a cascading, translucent-glass sta case to encourage casual meeting among Hyatt employees. The atriu was planned before construction began, according to interior architect Stephen Apking of the New Yo office of Skidmore, Owings & Mer which proved far less expensive than inserting it after the fact.

With the atrium's cubic black walnut coffee bars and crisply detailed stair, the interiors effectively express Hyatt's global identi synthesizing East and West, and urban sophistication with a more relaxed, resortlike atmosphere.

Commentary

Even if the results are not as spe tacular as they might have been had Foster designed the Hyatt Center—one imagines an inventively conceived workplace and a showstopping “green” tower—Cobb's design has a value as a model more than a one-off. It's an attractive, but not arbitrary, alternative to the box and shows that architects can elegantly respond to the imperative to forti

Ideally, the prominent client f this building would have been mo aesthetically adventurous. Both architect and client deserve credi for creatively dealing with financi realities 9/11 imposed. While the Hyatt Center may at first appear be a nose-thumbing break from Chicago's past, it is, upon close inspection, simply the latest exam ple of the city's long and exempla tradition of hard-nosed but high-quality commercial architecture.

kidmore, Owings &
lerrill's Stephen
pking concentrated
menities for Hyatt
orporate offices along
n atrium, most notably
coffee bars that can-
lever over the glass
air (right). Equally
resting is the 12th-
oor reception area
elow and opposite,
p), where the walls
d a monumental stair
e paneled in black
alnut. The reception
ea and a boardroom
pposite, bottom) pro-
de a showcase for
od furniture by Mira
kashima, daughter
the Japanese-
nerican craftsman
orge Nakashima.

Bloomberg Headquarters

New York City

2

STUDIOS ARCHITECTURE ANIMATES AN OPEN OFFICE WITH LIGHT AND COLOR, PUNCHED UP BY LARGE-SCALE ART AND ELECTRONIC GRAPHICS.

By Suzanne Stephens

Architect: *Studios Architecture—Todd DeGarmo, AIA, principal in charge; Tom Krizmanic, AIA, design principal; Brian Tolman, senior designer and senior project architect; Mike Krochmaluk, project architect for typical floors and training center; Geoff Deold, project architect for broadcast spaces; Brooke Luckock, Sohith Perera, designers*
Client: *Bloomberg LP—Paul Darrah, director of global real estate and design*
Consultants: *Cosentini Associates (m/e/p); Johnson Schwinghammer (lighting); Shen Milsom & Wilke (acoustical); CS Technology, Scharff Weisberg (IT)*

Size: *611,545 square feet (occupied); 81,900 square feet (for expansion)*
Cost: *Withheld*
Completion date: *2005*

Sources

Glass: *PPG (Starfire); Abrisa (Luxar); Schott (Amiran); Depp Glass (color laminated); McGrory Glass; Galaxy Glass*
Acoustical ceilings: *USG; Ceilings Plus; Baswa-Phon*
Plastic laminate: *Dupont Corian; Abet Laminati; Nevamar; Wilsonart*
Stone flooring: *Stone Source (Basaltina)*
Carpeting: *Interface*

For more information on this project, go to Building Types Study at www.archrecord.com.

The spacious Bloomberg headquarters in New York, designed by Studios Architecture, jolts the first-time visitor like a swig of Red Bull. The bold and vibrant mix of the light-filled, open interiors, punched up with electronic graphics, large-scale art, vivid colors, and stylish furniture are, needless to say, not typical of the corporate office genre. The headquarters, which forms the anchor space in a mixed-use office, residential, and retail structure designed by Pelli Clarke Pelli Architects (formerly Cesar Pelli & Associates), extends vertically and horizontally over an entire city block. The basic parti is unusual: Rafael Pelli carved out a large, open, horse-shoe-shaped court in the middle of the block to accommodate entrances for offices, apartments, and a restaurant. A three-story bridge, used by Bloomberg, projects over the courtyard to link the 10-story office block on the east with a 54-story office and apartment tower on the west.

Program

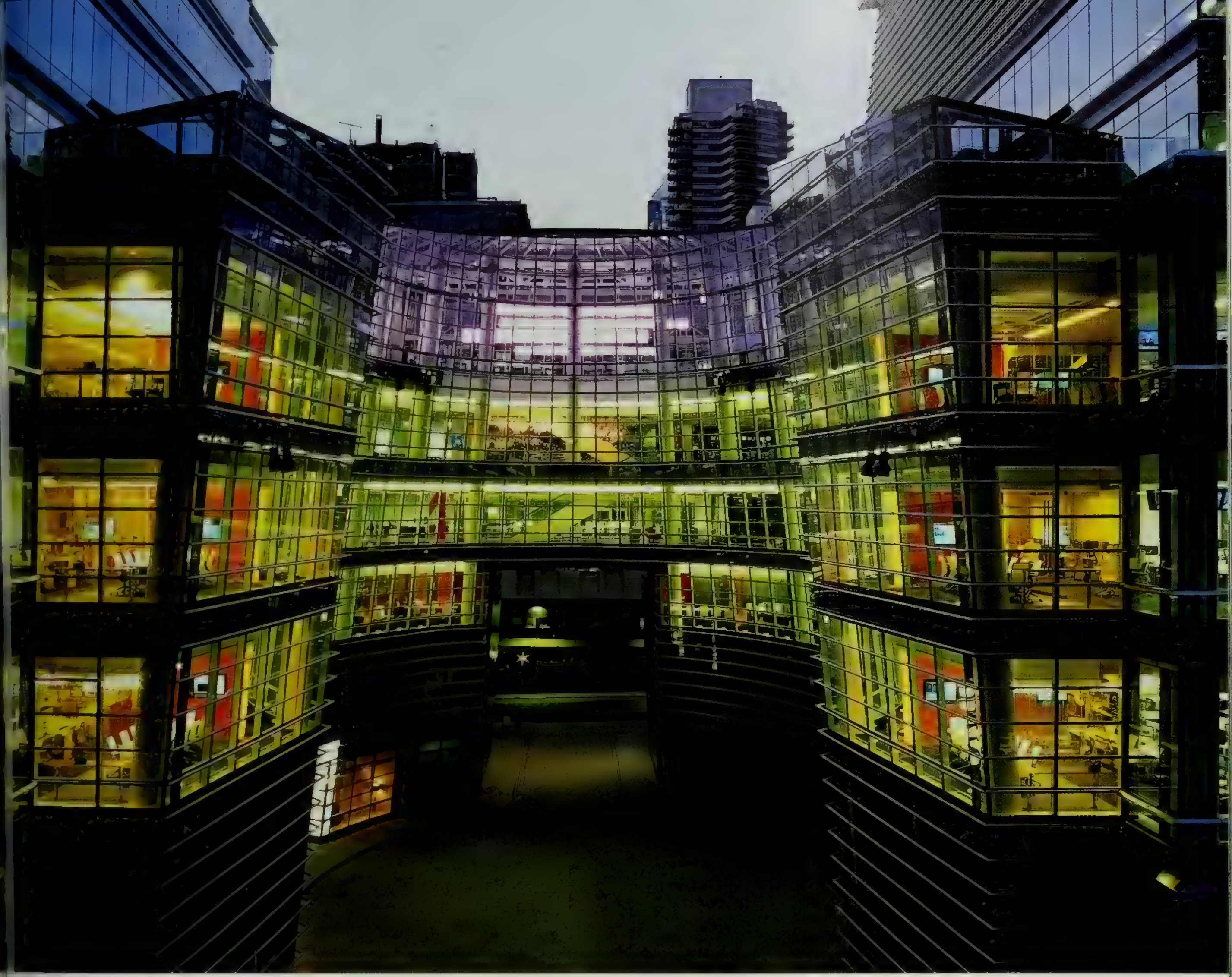
In 1999, Bloomberg, the global financial communication and professional services company founded by Michael Bloomberg (now mayor of New York City), decided to consolidate its Manhattan-based headquarters. The departments for broadcasting, research and development, and the sales of Bloomberg services (including terminals and software) had been dispersed in four different buildings. The company signed a 20-year lease for 700,000 square feet (including 200,000 square feet for expansion) for its 3,700 employees.

The in-house design team, headed by Paul Darrah, an architect who is the director of global real estate and design, enlisted Studios Architecture, led by Todd DeGarmo, AIA, and Tom Krizmanic, AIA, to ensure the adherence to certain precepts of the Bloomberg ethos. To begin with, the design was to promote a literal transparency throughout offices, conference rooms, and circulation areas. "There is no front of the house and back of house," says Darrah. Needless to say, no one gets a private office, not even the C.E.O. (although he has his own dichroic glass-paneled conference room).

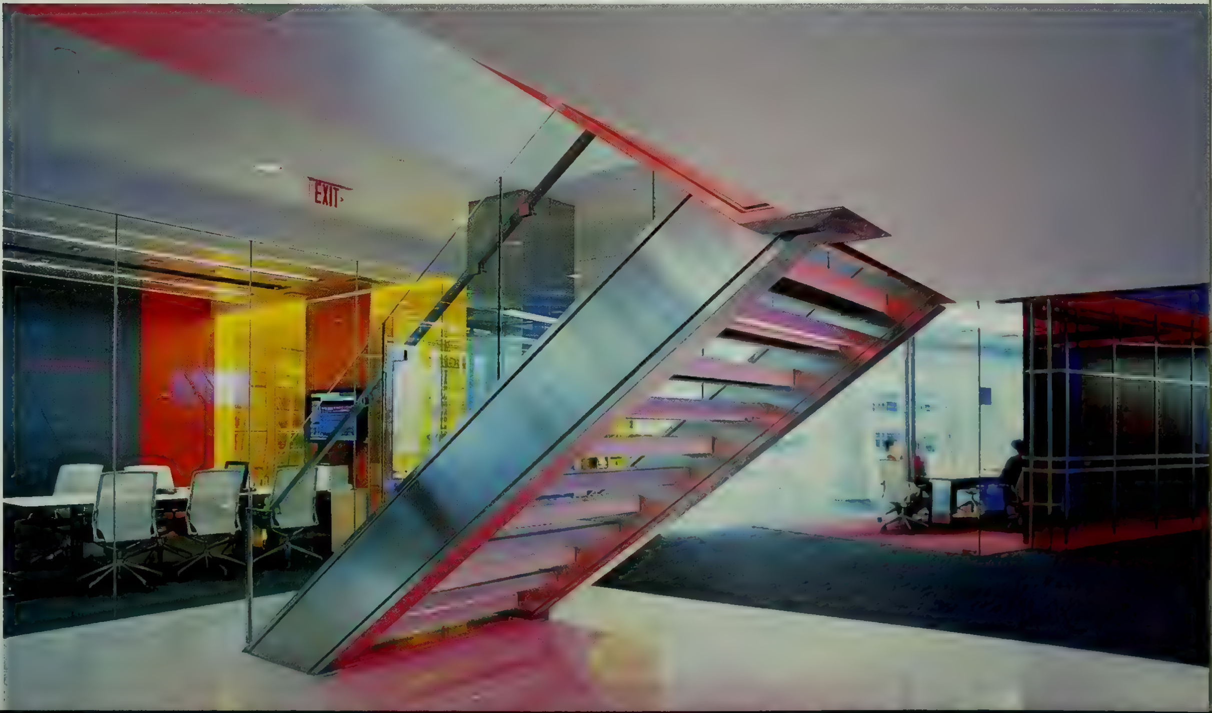
Since Bloomberg also believes in the "paperless office," it asked Studios to design modular desks with a minimum of storage space, equipped with the company's mor tors. Quick floor-to-floor accessibi via open stairs and escalators wa also deemed essential. (With a training center below ground, and offices spread vertically, elevators are still part of the program.)

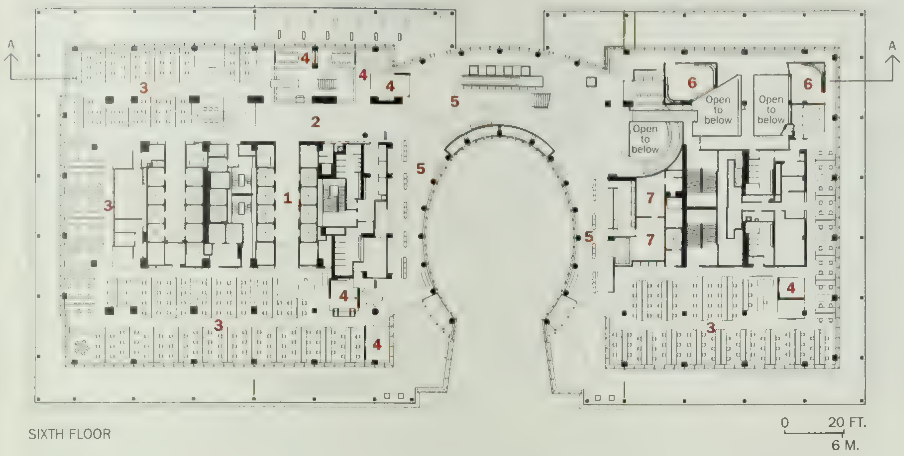
Solution

A "wintergarden," or large receptio area, on the sixth floor occupies th glazed bridge linking broadcasting studios on the east block to sales and administration departments o the west. Rafael Pelli, of Pelli Clark Pelli, designed the double-height space with a steel radial-truss stru ture supporting a skylight that follo the arc of the courtyard. From this



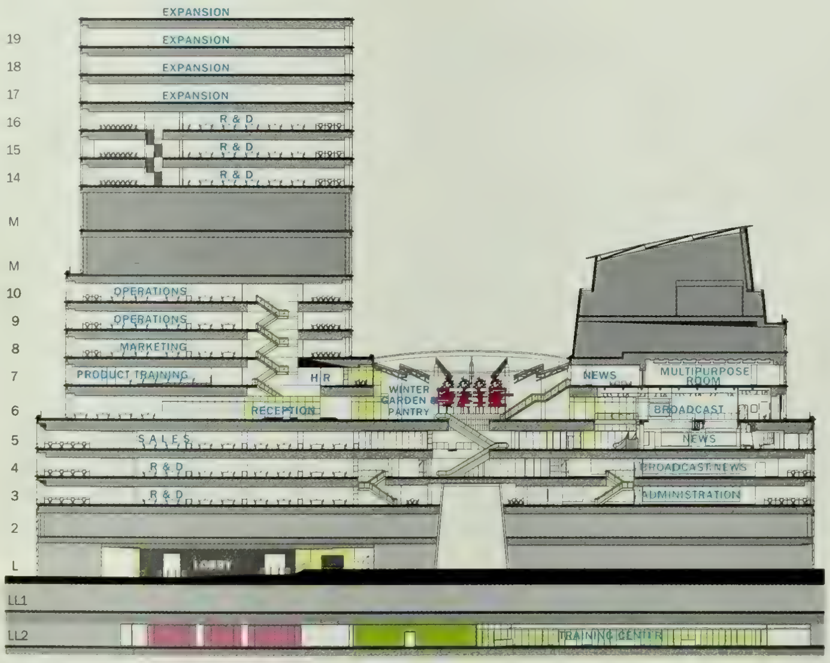
idios Architecture
ecuted offices
Bloomberg in a
ked-use, steel-and-
ncrete-framed spec
lding (opposite)
signed by architects
li Clarke Pelli. The
rer firm carved out
nidblock interior
urt for entrances to
ces and apartments
ove). Bloomberg's
n-riser stairs, such
one on the third
or (right), look like
works, owing to the
inless-steel stringers
h treads backlit by
rescent tubes in
gel sleeves.





SIXTH FLOOR

1. *Elevators*
2. *Reception*
3. *Offices*
4. *Meeting area*
5. *Wintergarden and pantry*
6. *TV broadcast*
7. *Radio broadcast*



SECTION A-A

The two-story-high reception lobby on the sixth floor acts as the hub and a pantry. Pelli Clarke Pelli designed the steel radial-truss structure supporting the skylight (left) on the bridge between the two towers. The bipartite floor plates run generally from 30,000 to 40,000 square feet in the east tower and 20,000 to 30,000 square feet in the west one.

hub, where a pantry with free snack brings employees together, open stairs and escalators connect to floors immediately above and below

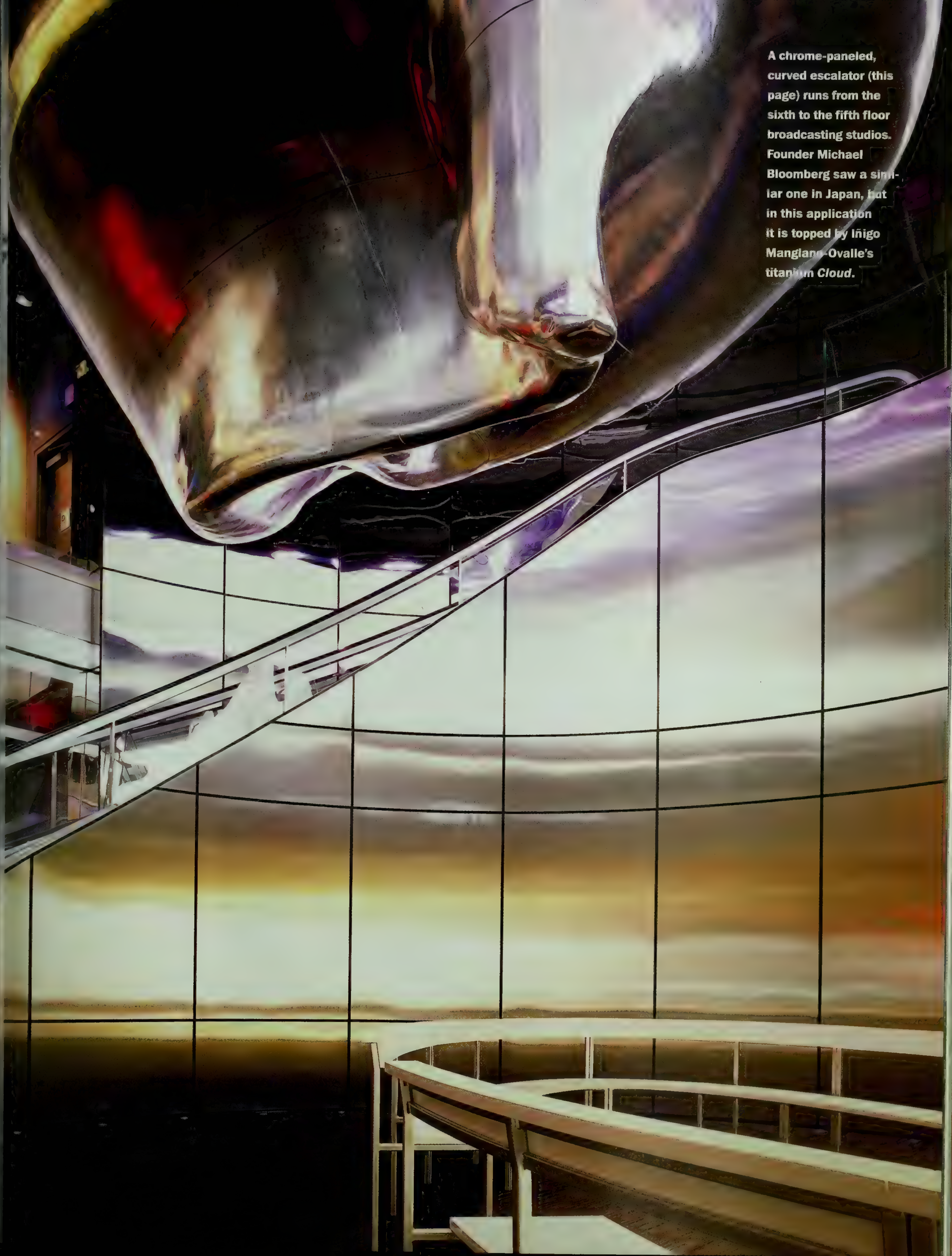
In keeping with the desire for transparency, Studios enclosed the conference rooms (125 in all) in vibrantly tinted glass, and strategically placed them as buffers between the open offices and the circulation areas. With their vivid orange, gold, fuchsia, lavender, green, and blue colors, the conference rooms appear to be life-size counterparts to the signature Bloomberg aquariums, filled with multihued exotic fish, coral reefs, and plants, found throughou the offices.

Low, modular white desks, 5 fe or 6 feet 6 inches long, depending c function, allow clear sight lines to pr vail. Since ceiling heights range fro 9 feet 6 inches to 12 feet 6 inches, the spaces rarely feel oppressive.

More than anything, the spectacular use of art and graphics in the public areas galvanizes the env ronment and provides a sense of orientation to this multilevel hive o activity. For example, Pentagram Design sparked up the wintergarde with a Times Square–size, four-ban LED zipper carrying financial data. Permanent large-scale artworks, chosen in consultation with the Public Art Fund, transform the various circulation nodes: They include Iñigo Manglano-Ovalle's *Cloud* ove a spiral escalator, and two lighting pieces by Spencer Finch mounted in equally visible places. For their part, the architects transformed th stainless-steel stairs connecting th various floors into light sculptures backlighting the open risers with fl orescent tubes in red gel sleeves. koi pond replete with colorful fish and a frog adds an unexpected no at the base of the sixth-floor stair.

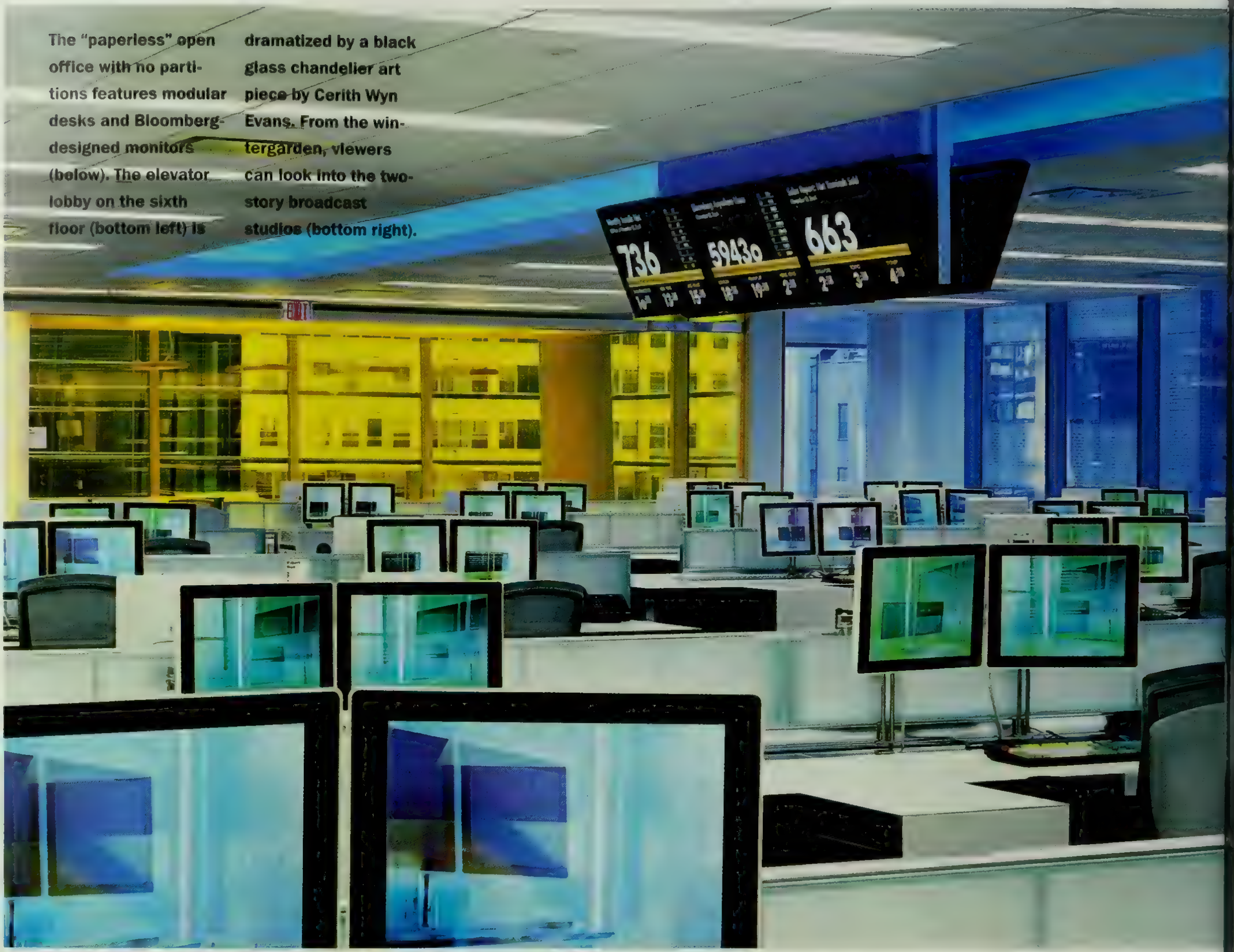
Commentary

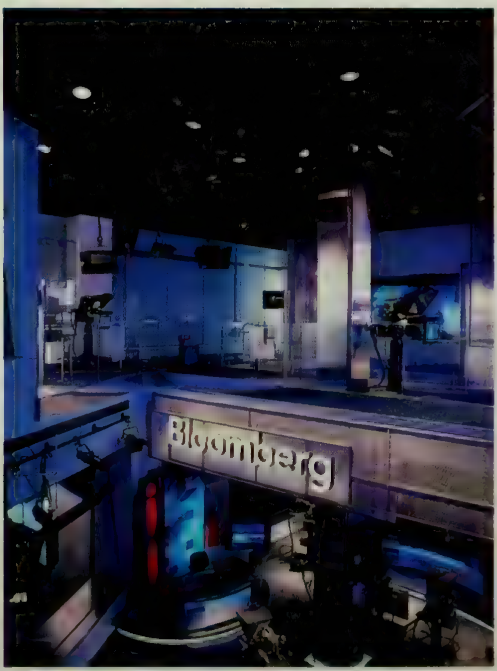
"This is a total collaboration," remarks Darrah about the conjunction of architecture, art, graphics, a interior design. Obviously, such collaboration costs money—the reas most office workers may not benef from this approach. Nevertheless, i



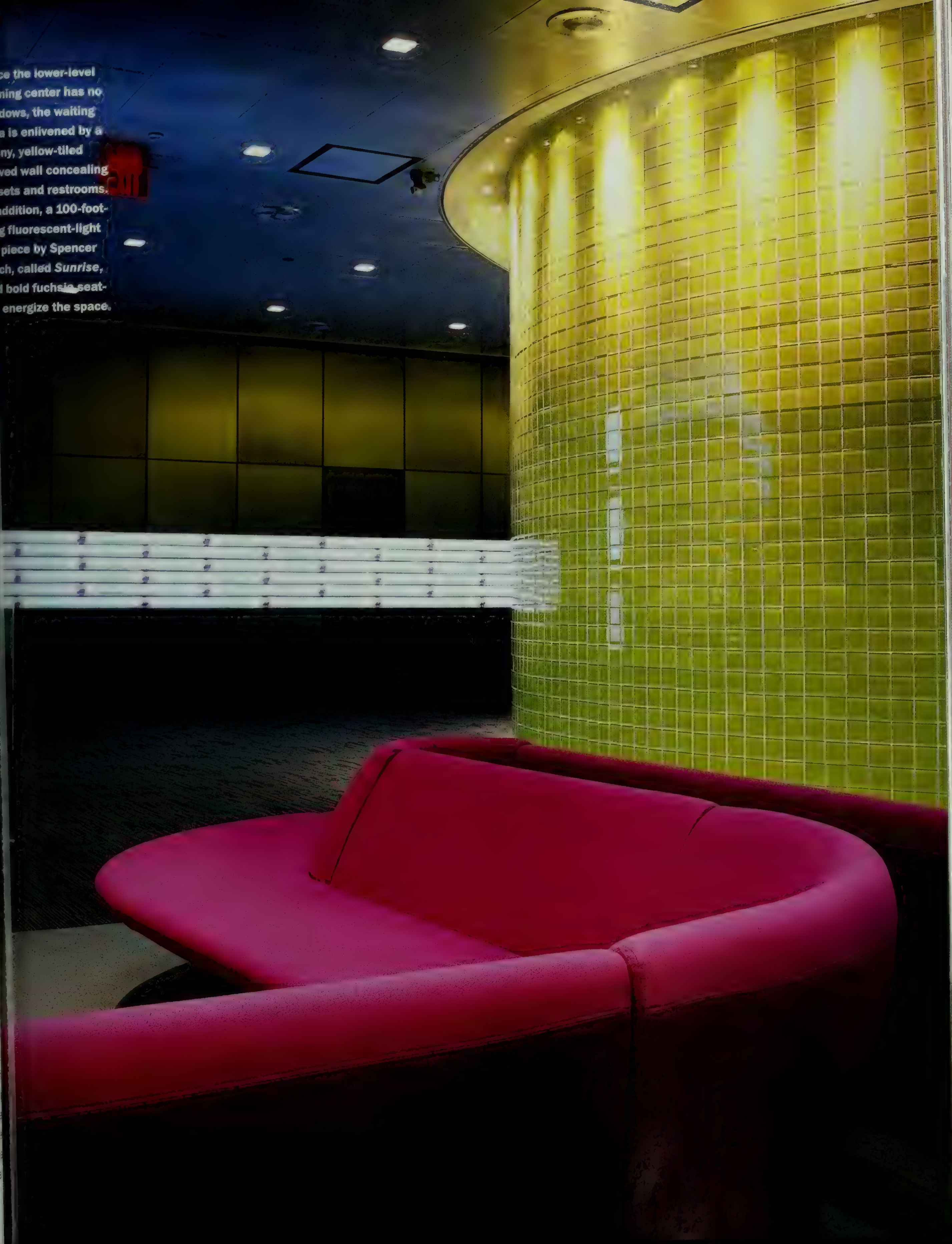
A chrome-paneled, curved escalator (this page) runs from the sixth to the fifth floor broadcasting studios. Founder Michael Bloomberg saw a similar one in Japan, but in this application it is topped by Iñigo Manglano-Ovalle's titanium *Cloud*.

The "paperless" open office with no partitions features modular desks and Bloomberg-designed monitors (below). The elevator lobby on the sixth floor (bottom left) is dramatized by a black glass chandelier art piece by Cerith Wyn Evans. From the wintergarden, viewers can look into the two-story broadcast studios (bottom right).





should be studied for the effect th
architecture and design have on p
ductivity. With regard to the comm
complaint that loud voices travel t
well in the open office, Krizmanic
replies that since there are no par
tions and you see everybody, peop
automatically keep their voices
down. To this observer, the main
problem seemed to be the lack of
storage space. (Overheard: It work
best for "paper-phobic Lilliputians."
In terms of a total design, the Pelli
columns and skylight in the winter
garden/pantry introduce a brawny
muscularity not quite in sync with
the shimmering weightlessness of
the graphics, art, and interior desig
In spite of all that, the headquarte
is so far removed from the conve
tional office, it throws this normal
Dilbert-in-a-cubicle drone into a
state of (euphoric) shock. ■



nce the lower-level aining center has no ndows, the waiting ea is enlivened by a nny, yellow-tiled rved wall concealing osets and restrooms. addition, a 100-foot- ng fluorescent-light piece by Spencer ch, called *Sunrise*, d bold fuchsia seat- energize the space.

Endesa Headquarters
Madrid, Spain

3

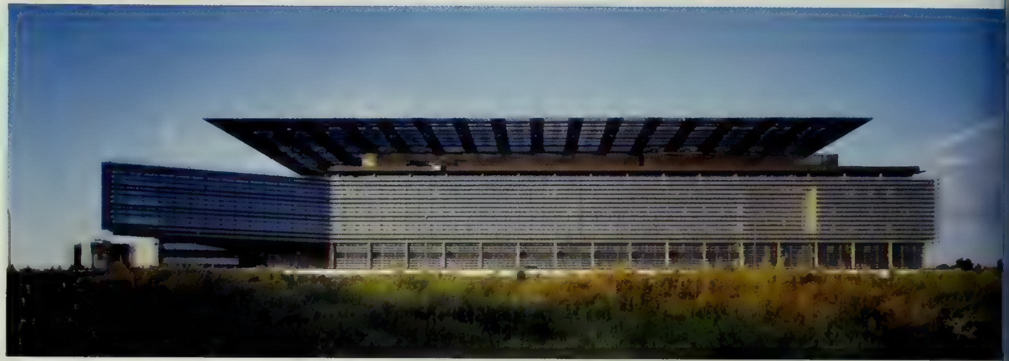
KOHN PEDERSEN FOX AND **RAFAEL DE LA-HOZ** STRETCHED A HIGH-TECH PATIO ROOF TO CONSERVE AN ELECTRIC UTILITY'S ENERGY—AND URBANITY

By David Cohn

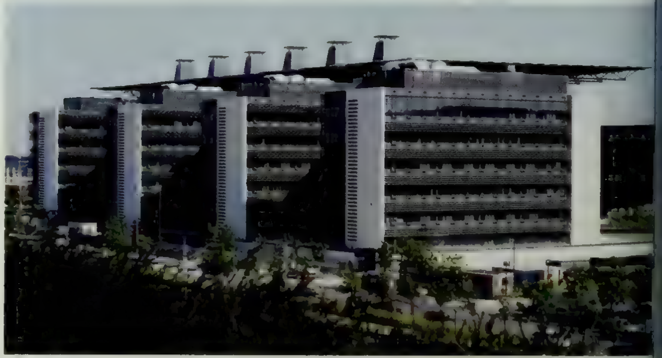
Architect: *Kohn Pedersen Fox—Lee A. Polisano, James E. Outen, Cristina Garcia, Eliseo Rabbi*
Architect of record: *Rafael de La-Hoz Arquitectos*
Client: *Endesa*
Consultants: *Prointec (structural engineers); Battle McCarthy (m/e/p)*
Contractor: *Gerens Hill International*

Size: *972,505 gross square feet*
Cost: *$81.6 million*
Completion date: *2003*

Sources
Masonry: *Eurogramco*
Curtain wall: *Permasteelisa*
Atrium roof structure: *Horta*
Structural glass, glass entrances: *Bellapart Engineering*
Glass louvers: *Glastec*
Shading devices: *Demetrio Sillero Arroyo*
Marble flooring: *Marmoles de Cabra*
Lighting: *Iguzzinni; Lleda*



The eight-story atrium at the center of this corporate headquarters is actually a kind of condenser, combining aspects of identity, urbanity, and climate control in much the same way as the traditional patio in southern Spain does. The spreading table of its shade roof offers a ready corporate identity. Its main floor, surrounded by services and overlooked by the changing drama of light filtering through the roof's louvers and struts, brings a measure of urban intensity to its suburban setting. And with its sophisticated control of sun, heat, and air, it makes effective use of the traditional patio's climatic benefits, offering a model for office-building energy conservation. This last is a particularly appropriate feature, since Endesa is one of the country's major electric producers.



Program

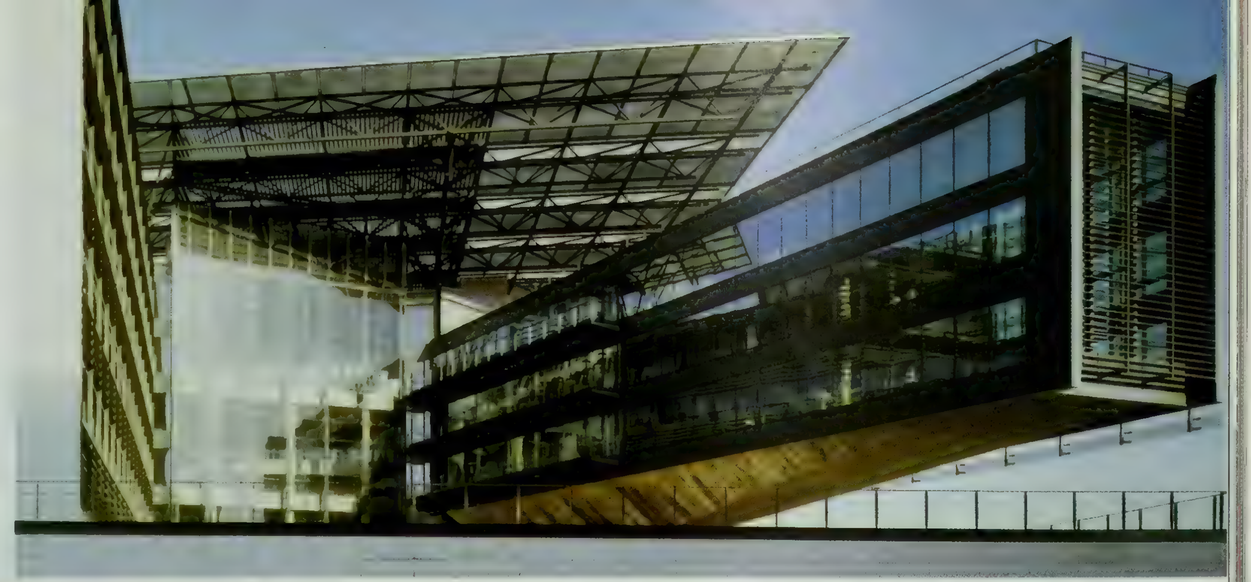
In the Campo de las Naciones business park outside Madrid, the building brings together the 1,300 employees and various divisions previously scattered around the city. Its 370,000 square feet of office space and 240,000 square feet of lower-level and basement services "creates a more efficient and interactive working environment," as Kohn Pedersen Fox's (KPF) brief explains. (KPF's London office designed the building with Rafael de La-Hoz, a Madrid-based architect specializing in corporate buildings.) The company initially expected to fill the facility gradually, leasing what it didn't use, although in the end it occupied the entire structure.

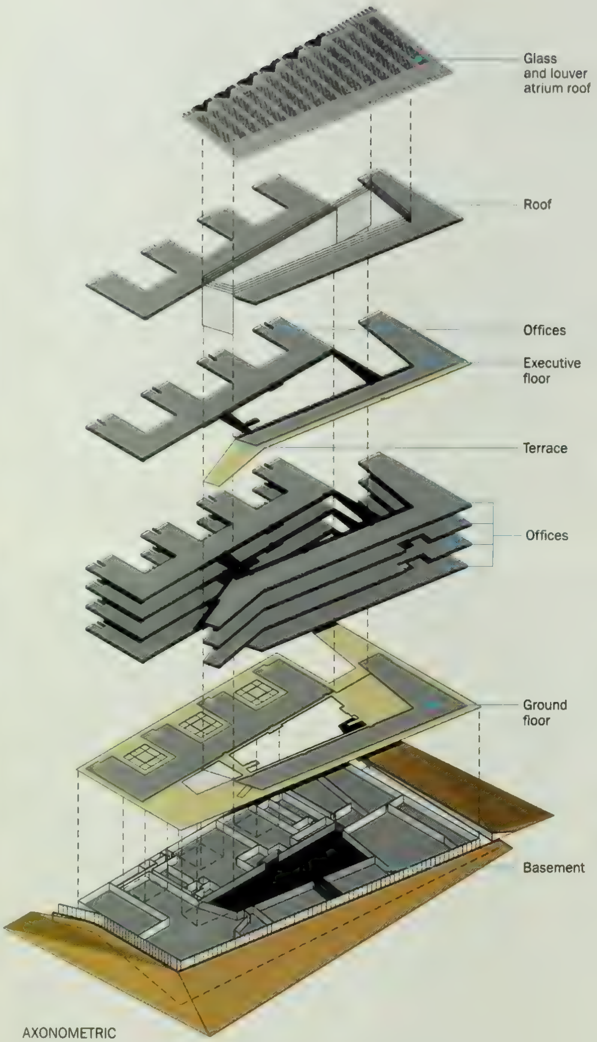
The project had to create a strong identity for Endesa on a limited budget (the total cost, according to La-Hoz, was $81.6 million). This required, for example, the use of standard components for the facades to partially compen

David Cohn is RECORD*'s Madrid-based correspondent and author of* Young Spanish Architects *(Birkhäuser, 2000).*

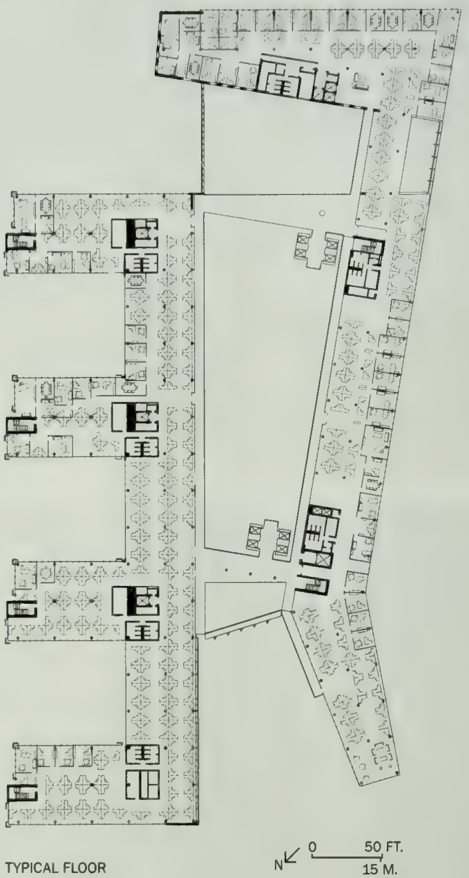
For more information on this project, go to Building Types Study at **www.archrecord.com.**

desa faces the
hway with a contin-
us mass (opposite,
) and a dramatically
ntilevered wing
ht), while a comb-
aped block with four
jecting bays faces
street (opposite,
tom) along with
entry (below) and
glass atrium roof.





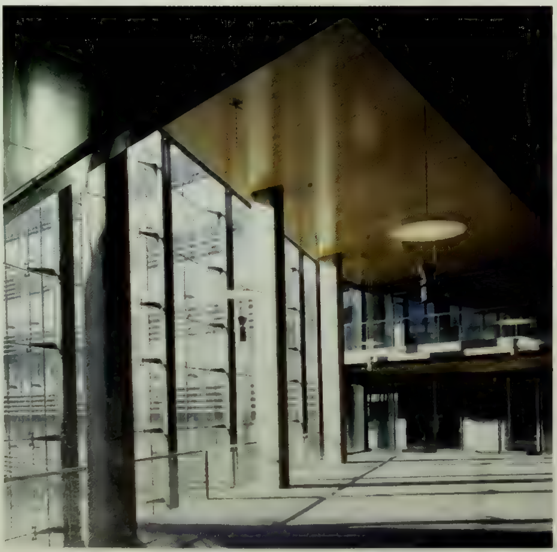
AXONOMETRIC

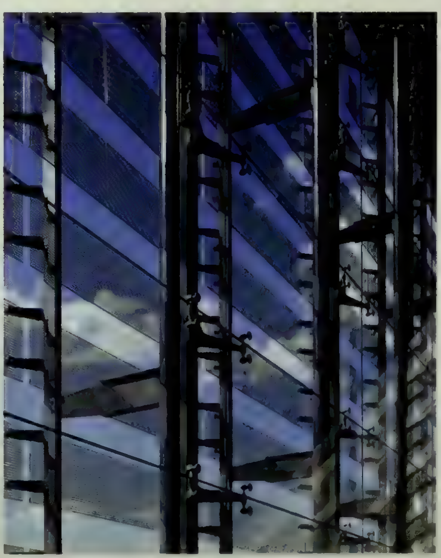


TYPICAL FLOOR

A horizontal plane of frameless glass suspended from steel trusses admits ample daylight into the atrium (opposite).

Some of the walls are frameless glass (below left), and some of them have fritted shading glass blades (below right).





sate for the extra expenditure of the atrium. The building is the first in a line of commercial offices that occupy a narrow strip of land between a railroad cut and the M-40, a major ring highway. The design had to contend with isolation, noise, and pollution.

Solution

KPF, which has designed several atrium-centered projects in the colder climates of northern Europ and La-Hoz divided the office flo area into two continuous blocks embracing the atrium. These are concrete structures with modular plans and floor plates over 50 fe deep. Open offices predominate, by continuous floor-to-ceiling windows. The layering of the facades and the shadows they cast, furth enlivens the indoors. The facades vary according to the exposure, with fixed aluminum brise-soleils southern elevations of the comb-shaped block that faces away fro the highway, with its northern cor ners marked by crisp folded plane of white Córdoba limestone.

Horizontal slats of fritted glas protect the southern and western exposures of the imposing block that faces the highway, reducing glare and noise. This block folds around the atrium to the south to create the executive office wing, and angles out at its northern end in a 100-foot-long cantilever, a ge ture that commands attention fro drivers zooming by on the highwa (and conveniently avoiding foundations in poor soil, according to Polisano). Inside, corridor bridges span the atrium, dividing it into an entry court, a central gathering space, and a multilevel zone for work breaks and informal meeting at its northern end.

The large roof deck is a laye fifth facade, supported by a gangl structure of tubular steel legs and 17 trusses with spans of up to 12 feet. Mounted on the trusses, motorized aluminum louvers performing the role of the traditional patio's movable canvas tarp over the atrium. (The client ultimately rejected the architects' proposed

Bridges link the two wings of the building under dramatic daylight and shadow (above). Shared spaces for eating and meeting encourage casual encounters in the atrium (right).

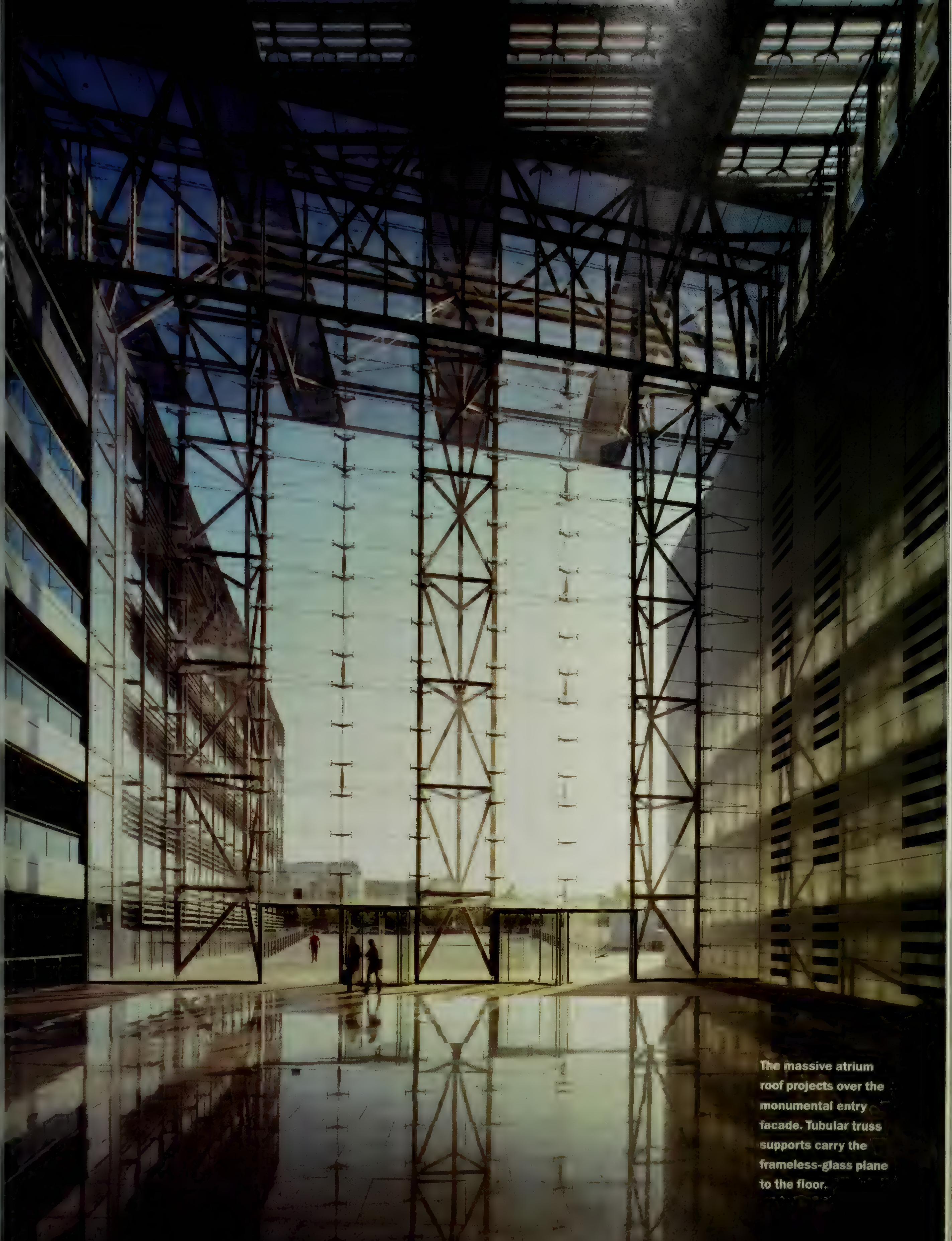
arrays of photovoltaic cells.)

The continuous plane of glass over the atrium is the large and most technically challenging glazing installation of its kind, according to the architects. Each glass sheet, about 4.5 feet by 9 feet, hung from the trusses, ca support the weight of maintenan workers. The glass roof pitches fo drainage, is acoustically sealed, and engineered for fire-resistanc Despite this complexity, its overa effect is light and direct. Polisano comments, “We all worked very hard to get that.”

Exploiting the wide temperature swings in hot-climate Madrid the underfloor ventilation system uses cool nighttime air to draw of heat accumulated in the slab during the day. Exterior windows wer sealed for budgetary and acoustic reasons, but exhaust air flows naturally into the atrium from the slightly pressurized offices. Heat gain from the glass roof and four passive-solar chimneys induces exhaust air to rise, improving air circulation. An evaporative syste delivers free cooling from the ground through the atrium floor, augmented by mechanical coolin when necessary.

Commentary

The dramatic atrium changes its mood with the shifting of roof louvers and the moving clouds and sun. Despite this grand public gesture, the atrium feels oversized at ground level, and it lacks the hoped-for buzz of activity. Security measures keep the general public out—as would the isolation of the site to pedestrian traffic in any case—and the café tables and landscaping the architects envisioned have failed to materialize. The atrium feels more like a religious cloister, an inward-looking space of retreat and meditation, than one of southern Spain's livab residential patios. Replacing the dedication of religious life for the industry of enterprise, could there be a more thoroughly European interpretation of the American corporate campus than this? ■



The massive atrium roof projects over the monumental entry facade. Tubular truss supports carry the frameless-glass plane to the floor.

E.J. DeSeta Building
Wilmington, Delaware

4

KLING STYLISHLY REVAMPS THE BLEAK OFFICE-WAREHOUSE NORM WITH A STRUCTURE THAT ADEPTLY SERVES TWO DIVERSE BUSINESSES.

By David Gissen

Architect/engineer: *Kling—Robert G. Little, Jr., AIA, Marcelo Franganillo, AIA, Richard Ashworth, AIA, Chris Portner, Francesca Oliveira*
Client: *E.J. DeSeta and the Buccini/Pollin Group*
Consultants: *Kling (engineering, lighting, landscape)*
Contractor: *Buccini/Pollin Construction*

Size: *100,000 square feet (75,000 shop, 25,000 office)*
Cost: *$11 million*
Completion date: *2005*

Sources
Cladding: *VM (zinc "flat lock" paneling); Centria (corrugated metal)*
Curtain wall, entrances: *Kawneer*
Acoustical ceilings: *USG*
Tile: *Crossville; Dal Tile; Stone Source*
Furniture: *Knoll, custom fabrication by DeSeta*

Shop floors with offices tacked on are ubiquitous, but they are usually anonymous, built for as little money as possible, without expressing any identity for their tenants or offering any amenity to staff. Kling's new E.J. DeSeta building, rich with architectural detail and craftsmanship, shows that the type is anything but irredeemable. The assemblage makes a highly visible landmark for a split-personality pair of companies, one of which returns industry to increasingly white-collar Wilmington, Delaware, while the other hastens the city's transformation into a live/work destination.

Program

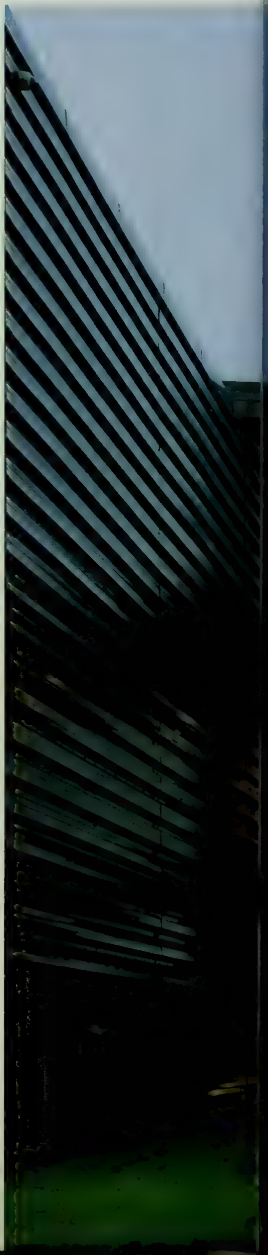
For Bernadette DeSeta, moving the family companies—E.J. DeSeta and the Buccini/Pollin Group—to central Wilmington from New Castle was a return to roots. The companies came back to where E.J. DeSeta, a metal-fabrication company, was founded, but Ms. DeSeta also wanted to visibly shore up the city's current revitalization efforts. In Wilmington, after all, the Buccini/Pollin Group, a real estate developer, has invested in residential and mixed-use conversions of older buildings and is completing a new apartment tower. The residential growth piggybacks revitalization by banks and financial institutions that have converted former industrial structures in this "postindustrial," credit-card-servicing capital. The commitment represented by DeSeta's distinctive architecture is intended to help buyers, tenants, and partners alike feel that Wilmington is a good place to invest.

E.J. DeSeta, the older of the two companies, needed offices and a new, 75,000-square-foot shop floor for its 50-year-old metal-fabrication business. Known for architectural ductwork, it has been moving into ornamental architectural metalwork, including furniture, partitions, and wall coverings. Buccini/Pollin needed only office space, but the structure's visibility would also signal the company's commitment to this emerging market.

Solution

Robert Little, the design principal at Kling's Philadelphia office, located both businesses in a shared two-story office structure that is lifted above possible floods on steel columns and skewed to aim the structure to the best views (and avoid an adjacent gas station).

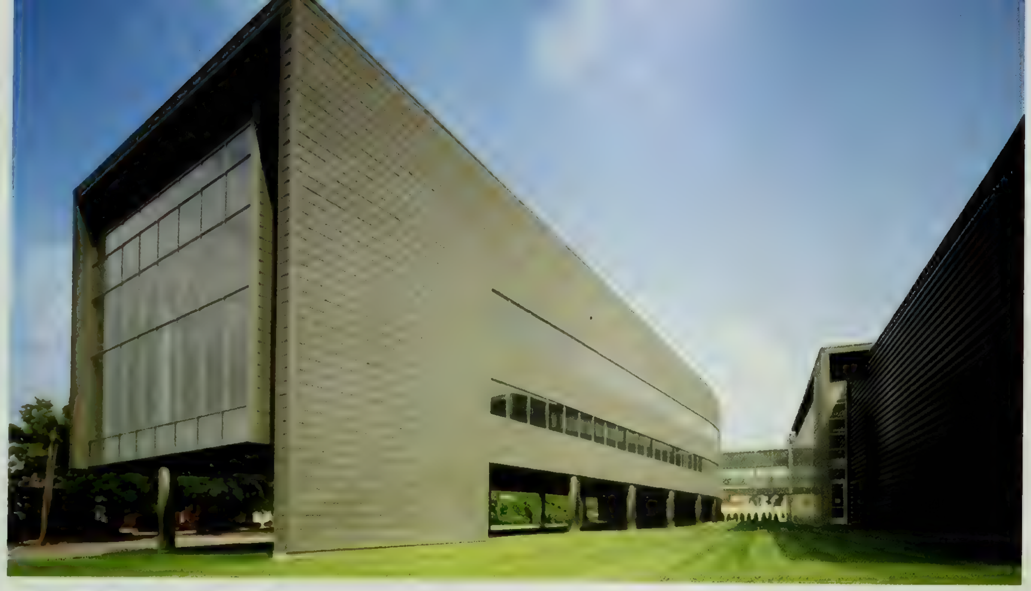
The office building is shaped on what Little describes as a "European approach"—narrow, 60-foot-wide floor plates offering ample light from both sides and access to views and shared space. The floors' perimeters are lined by offices sep-

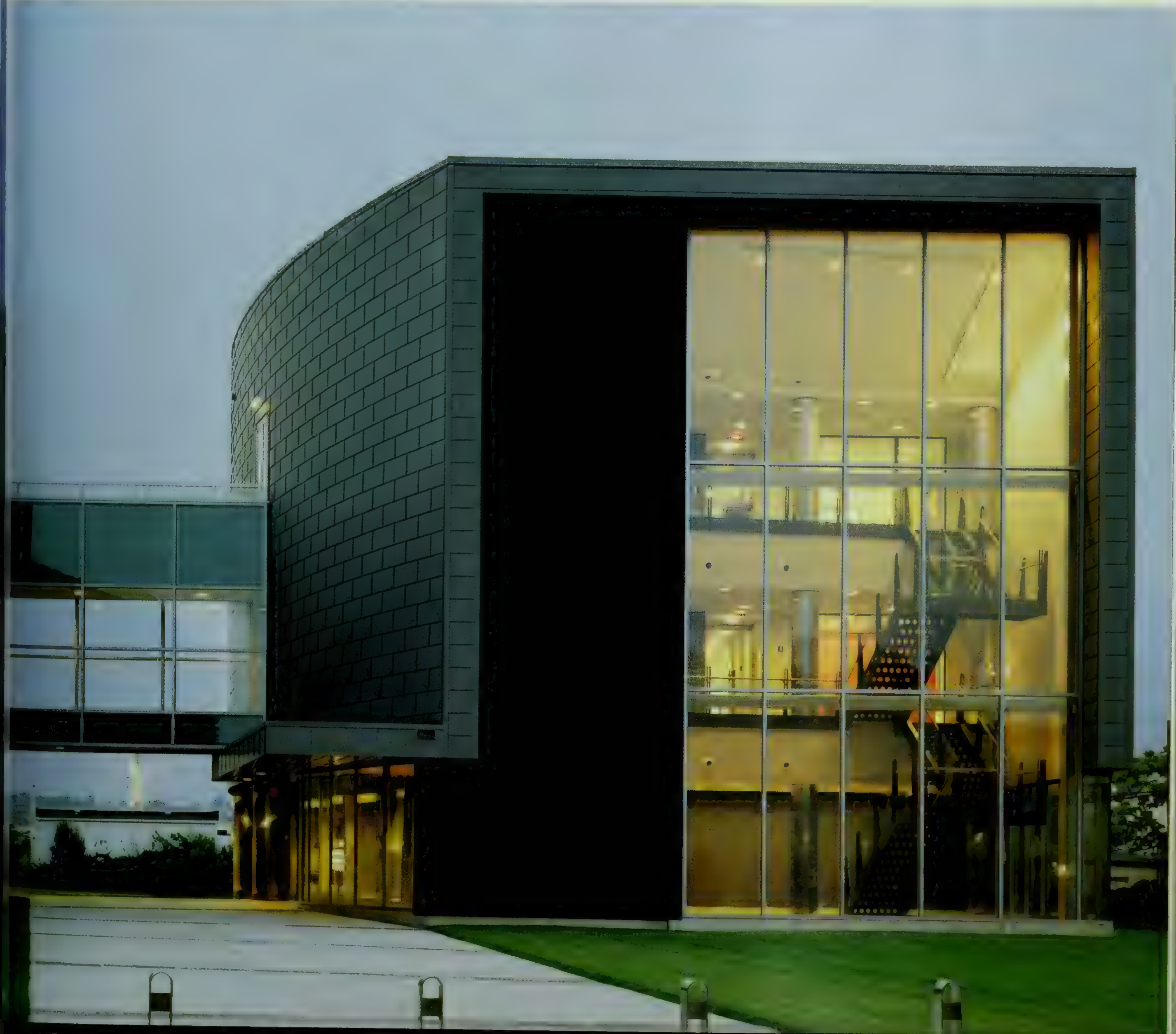

PHOTOGRAPHY: © WOODRUFF BROWN

For more information on this project, go to Building Types Study at www.archrecord.com.

David Gissen edited Big and Green *(Princeton, 2002) and teaches at Pennsylvania State University.*

e skewed orientation
the DeSeta building
ns the office wing
r right in photo,
ht) at views of down-
wn Wilmington, and
ens it to views of the
italized Christina
erfront (right). A
dge links the offices
a single-level pro-
ction shop (below).





arated from the cubicle pool only by translucent screens, so that daylight penetrates to the full floor depth. On the roof, the architects thoughtfully provided an outdoor terrace that offers sunset panoramas of the city.

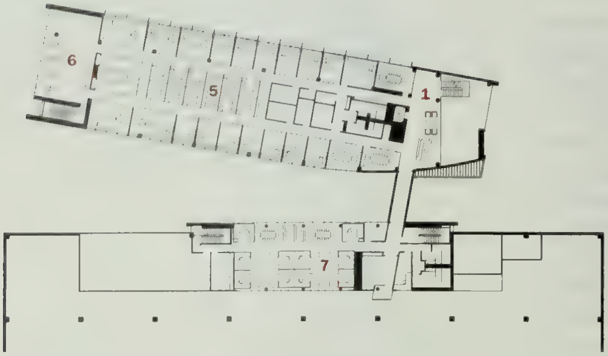
The corrugated-metal-clad production building is a conventional industrial shed. Glass walls push the exterior walls out a bit at the lunchroom, bringing light into the space between the two structures.

Kling worked closely with DeSeta fabricators to develop architectural details and furnishings that would advertise the company's prowess. On the outside, the DeSeta team fabricated the zinc sheathing system that shingles the walls of the office wing and the courtyard side of the factory. From simple sketches, DeSeta produced interior column details, stairs, railings, and furniture pieces from tubes, bar stock, panels, and wire fabric. A stone-and-steel reception desk greets visitors in the lobby.

Commentary

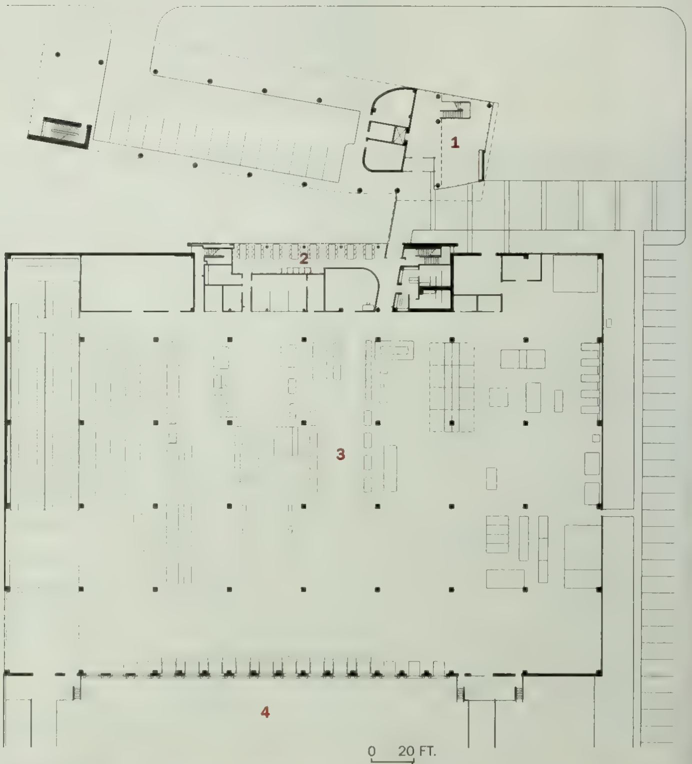
Kling has produced a space for office work that is communal, bright, and open to Wilmington's mélange of converted industrial structures and new residential ones. The proportion of bright, airy shared areas to individual workspaces is admirably high. The project's striking geometry is visible from the freeway as you enter town, yet adeptly fits into a context it still must share with a gas station. Even the biggish production building sits comfortably as the area witnesses increased urban residential development.

Though Wilmington possesses examples of the old sawtooth-roof types of factories that flooded shop floors with outside light and were ventilated with operable windows, the DeSeta production building, though beautifully articulated on the outside, unfortunately encloses a standard, windowless, mechanically ventilated workroom. Otherwise, the structure serving this odd couple of clients offers a worthy model for rapidly transforming service-sector cities that want to maintain an industrial presence. ■



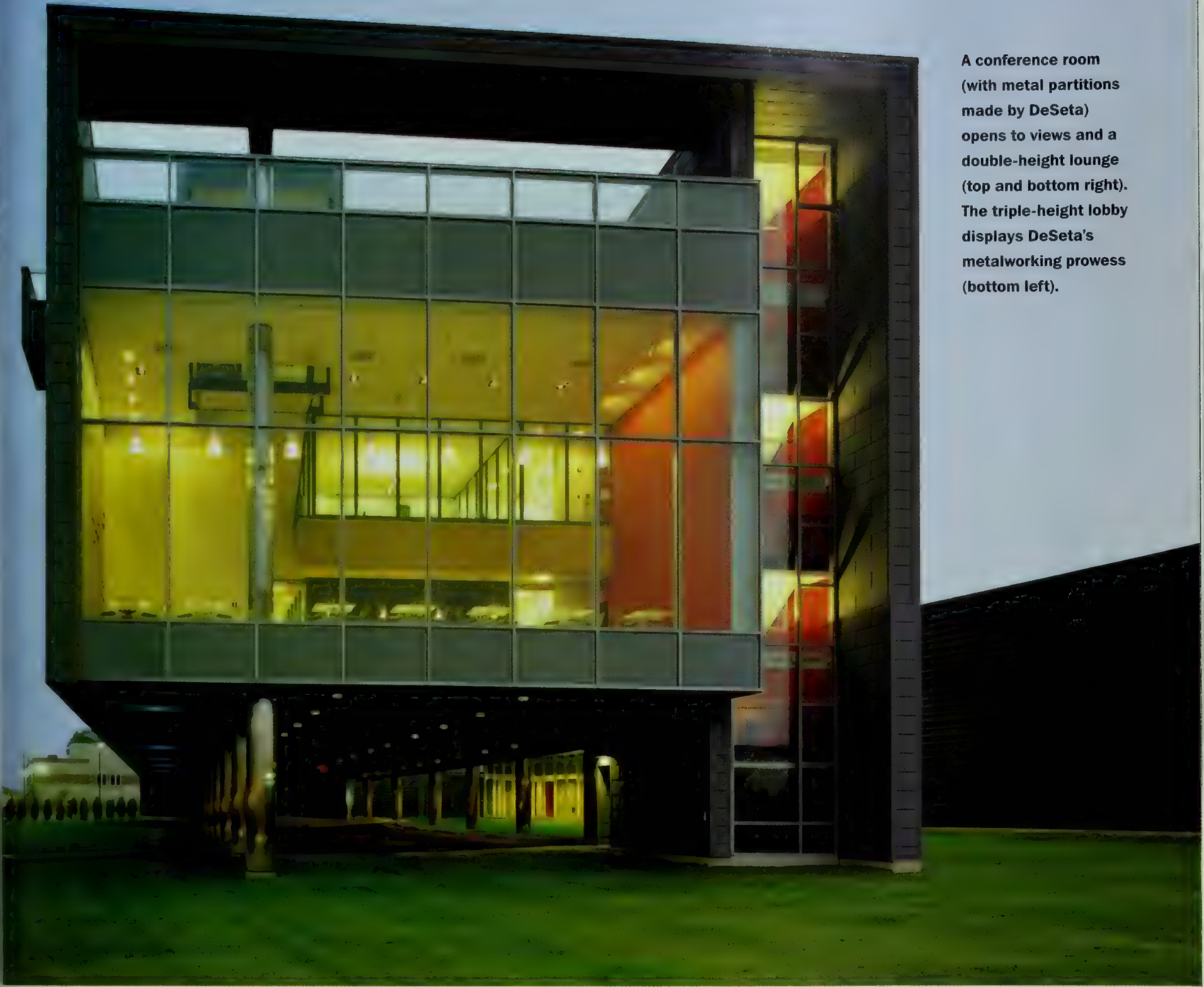
SECOND FLOOR

1. *Lobby*
2. *Lunch room*
3. *Fabrication*
4. *Loading*
5. *Office*
6. *Gathering*
7. *Drafting*



GROUND FLOOR

A drafting area, linked by bridge to the office wings, overlooks the conventional, windowless shed of the production shop (below).



A conference room (with metal partitions made by DeSeta) opens to views and a double-height lounge (top and bottom right). The triple-height lobby displays DeSeta's metalworking prowess (bottom left).

Highlight Munich Business Towers

Munich, Germany

5

MURPHY/JAHN REDEFINES SPEC IN A PAIR OF TECHNICALLY SOPHISTICATED ENERGY-EFFICIENT TOWERS UNITED BY CLIP-ON BRIDGES.

By Tracy Metz

Architect: *Murphy/Jahn—Helmut Jahn, Rainer Schildknecht, Philip Castillo, Stephen Kern, Steven Cook, Charles Bostick, Joachim Schuessler, Jan Müller-Gauf, Ingo Jannek, Isabell Klunker, Dan Cubric, Carl D'Silva, Francisco Gonzalez-Pulido, Colleen Caulliez, Michaela Fuchs, John Manaves, Nabil Mekdaschi, Patricia Siesler, Frank Weingardt, Mark Verwoerdt, Dieter Zabel*

Owner: *Bürozentrum Parkstadt München-Schwabing*

Consultants: *Werner Sobek Ingenieure (structural/facade engineering); Transsolar Energietechnik (climate and environmental); ENCO Energie-Consulting (m/e/p); Peter Walker & Partners, Rainer Schmidt (landscape); Jahn Lykouria Design (hotel interiors); Yann Kersalé (art lighting)*

Size: *800,000 square feet*

Cost: *$212.8 million*

Completion date: *2004*

Sources

Curtain wall: *Schmidlin*

Glass partitions: *Glasmarte*

Raised floor: *Mero*

Lighting: *Georg Wölfinger Elektro (building outline); SITECO (task)*

For more information on this project, go to Building Types Study at www.archrecord.com.

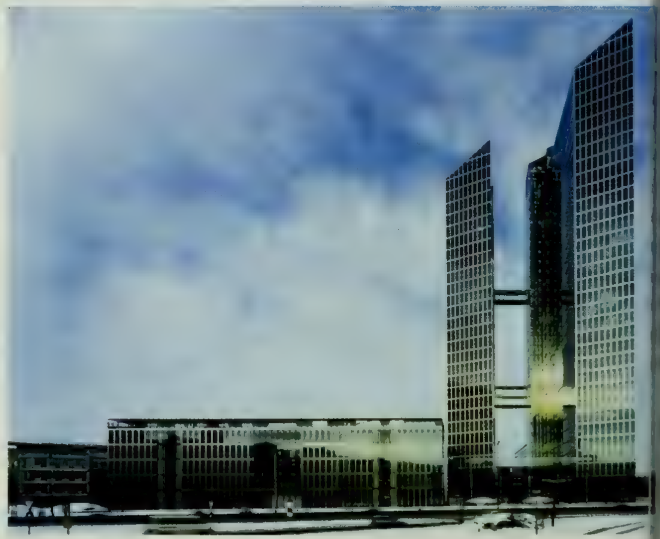
A spec office building cannot usually be thought a lab bench for innovation, but Murphy/Jahn, working with the engineer Werner Sobek, has not only refined the engineering and detailing derring-do it has employed on previous office projects, but the team has created a sparkling urban landmark.

Program

A wedge-shaped swath outside the city center, but prominently located next to a ring road and near a freeway, became available when Munich officials held a redevelopment competition in 1999. Officials intended the office-building development to signal a new life for a district full of warehouses that have gradually emptied. Eventually, a row of office buildings should fill in behind the Highlight Munich Business Towers, separated by a landscaped zone from future housing development.

Planners sought two discrete slabs on this conspicuous location in order to avoid an overbearing mass. The developer, Bürozentrum Parkstadt München-Schwabing, did too, but for a different reason: It wanted construction to be phased so that the offices could be brought onto the market gradually. In spite of a local glut of space, 50 percent of the Highlight Towers are now rented.

Tracy Metz is an international correspondent for RECORD *based in Amsterdam.*



Solution

The pair of thin, offset parallelogram towers (one 33 floors, the other 27) seem to present the unwrinkled, expressionless face reminiscent of Modernist buildings the world over. But the effect is sculpturally dynamic as the sharply angled roofs and the thin slabs of the towers appear to slip by each other as the viewer moves around them on the ring road or the autobahn. The effect is especially dramatic at night, with the shifting towers outlined by strings of blue lights and lit from within the external stair and elevator shafts by narrow red and green stripes.

Design partner Helmut Jahn placed the towers in the middle of the site to avoid the noise and pollution produced by the ring road. A six-story office block on the south side doubles as a sound barrier, with the freight elevator and the stairwells shielding workers from traffic noise. A seven-story, four-st designer hotel, the Innside, wraps the towers on the north.

The two bridges (one of them two-level) that link the towers are the project's bravura gesture. Jahn collaborating with his favorite structural engineer, Werner Sobek, pare them to a minimum: two long bea that support glass-panel floors, walls, and roof. The idea is that as many as eight bridges can be clipp on and off as desired, permitting floors in both towers to be combin in contiguous floors of about 26,7 square feet. The scheme offers en

rphy/Jahn faced the
rt ends of the
nich twin towers
ard the noisy high-
/ (opposite). A low
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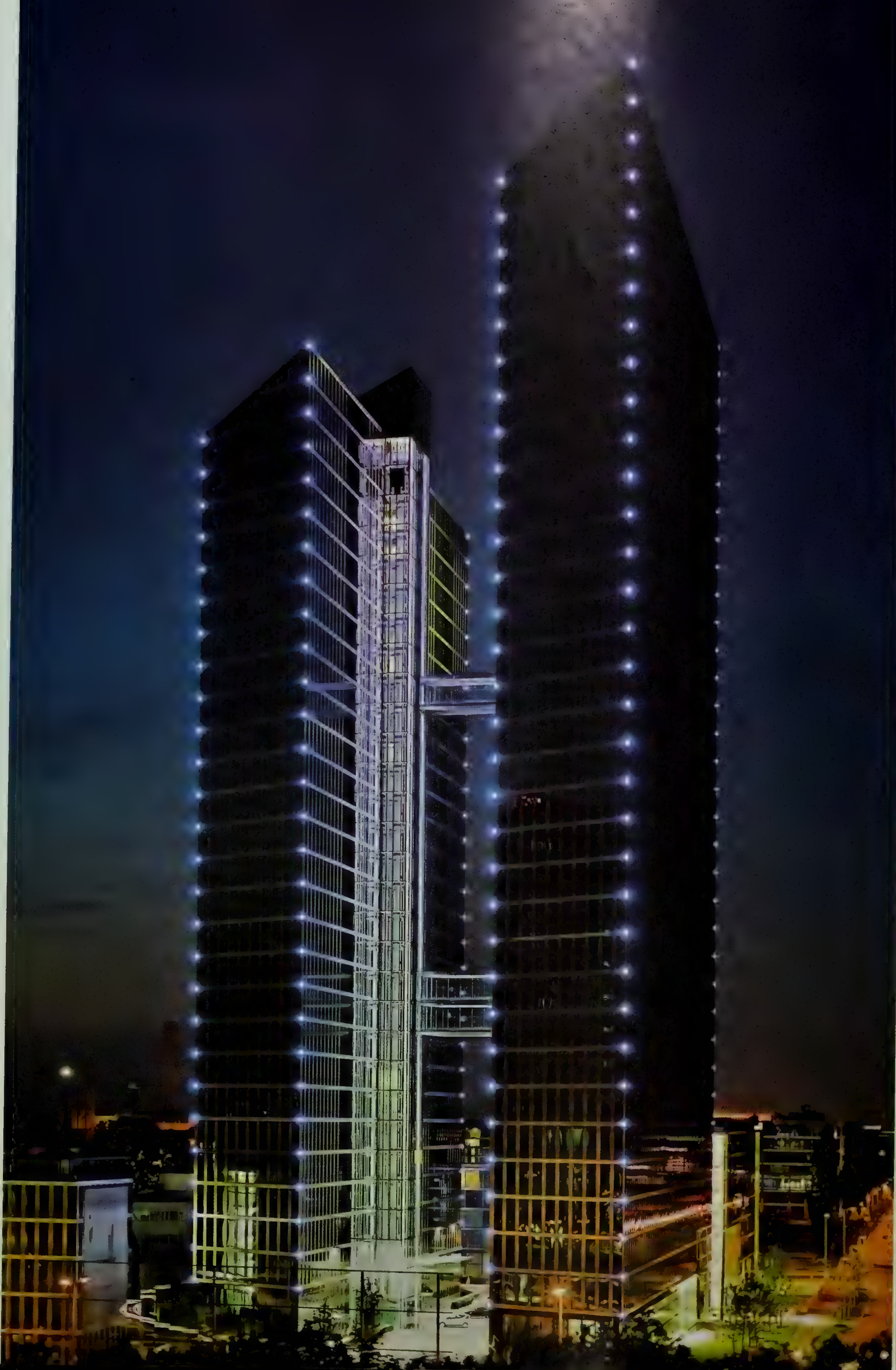
vator shafts (right).



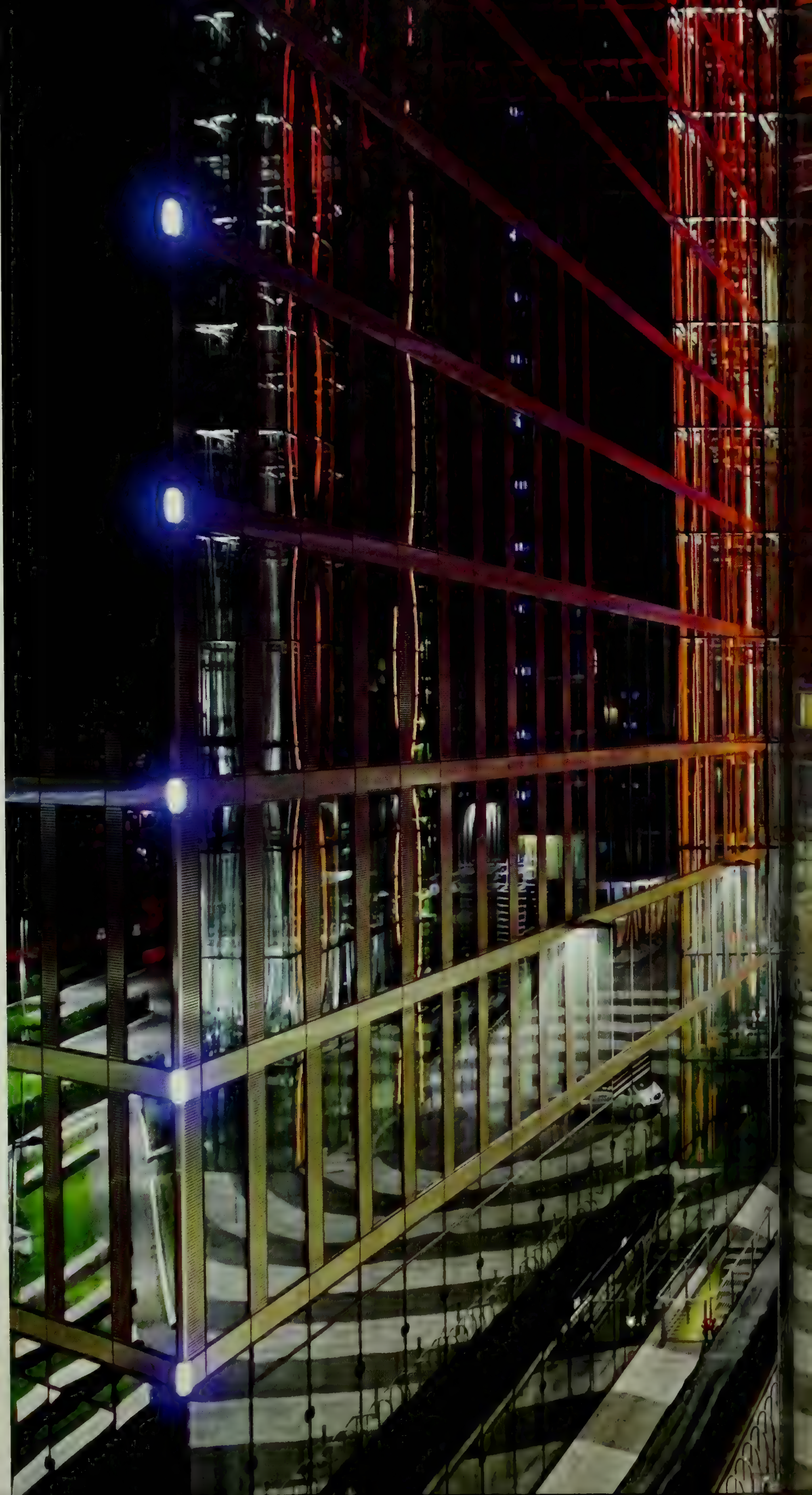
mous leasing flexibility.

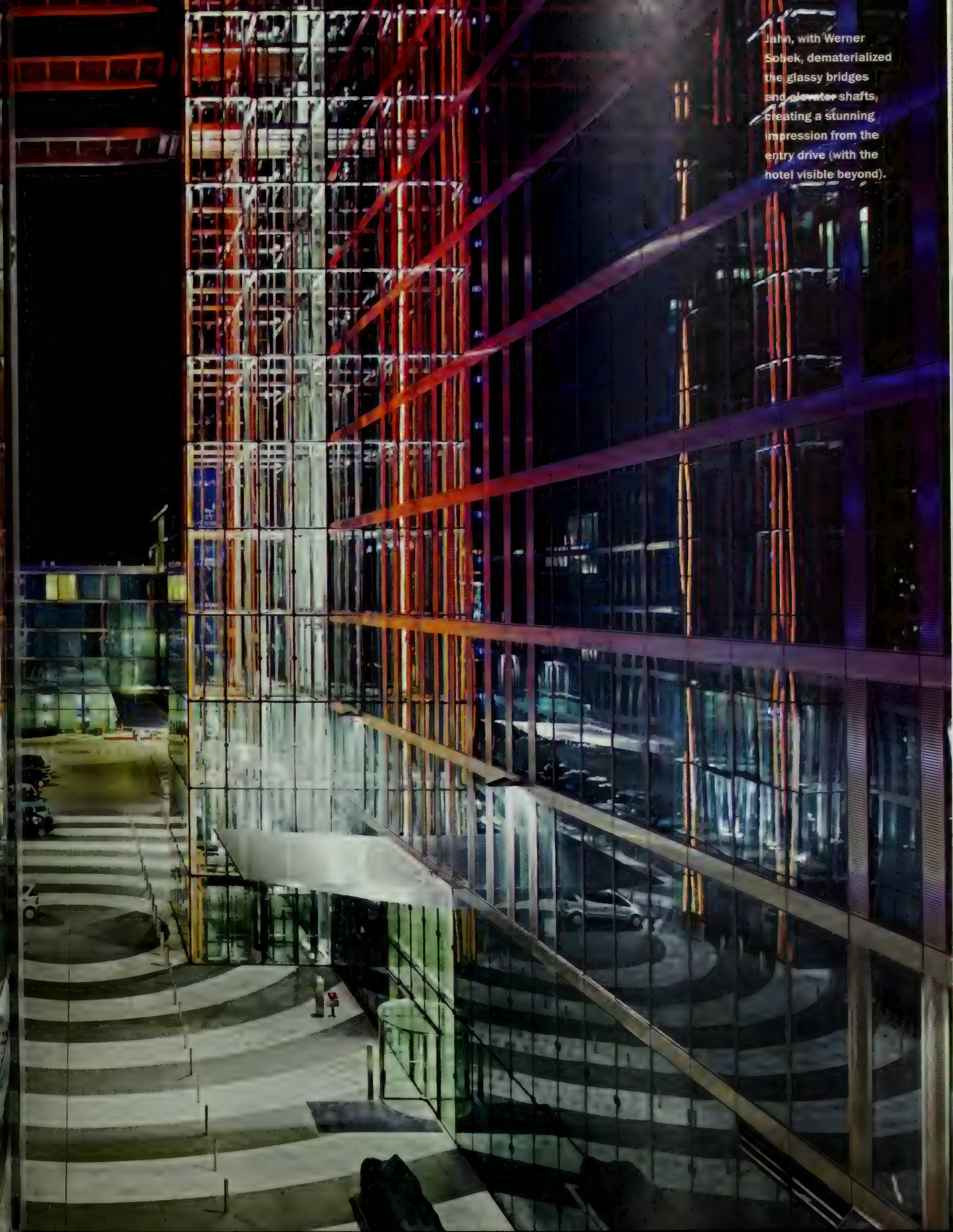
Up close, the towers are undeniably light on their feet. Murphy/Jahn claims that the steel structure has one of the highest slimness ratios in the world, 1 to 10. The buildings' small footprint liberated two thirds of the site for a landscape by Peter Walker, which opens the site visually to nearby park space. Above a 750-car, three-level garage, Walker united the site by drawing large concentric circles of black and white stone that run from the courtyards into the lobby.

German codes demand natural ventilation and offices with windows that open, along with strict limits on energy use. In the past, Jahn and other designers have met these requirements with costly double curtain walls separated by an insulating airspace. At the Highlight Towers, Jahn and Sobek trimmed the extra cost by designing a single-layer facade of large, triple-glazed, fixed-glass panels, alternating them with tall, narrow ventilating panels. Faced on the outside with perforated stainless-steel sheets, the ventilating panels open inside via full-height, double-glazed casement windows.

The same ventilating panels feed fresh air to ducts that run to heating and cooling fan units on each level. Conditioned air moves under the raised floor and into the the office space through low-velocity displacement outlets. (In the displacement concept, the buoyancy effect of warm air—rather than fan power—draws in fresh, cooler air from the floor.) Tiny perimeter fan units, along with the operable windows, offer individual thermal control. Radiant pipes in the slab above the ceiling, connected to a heat exchanger, draw off or supply additional heat at almost no energy cost.

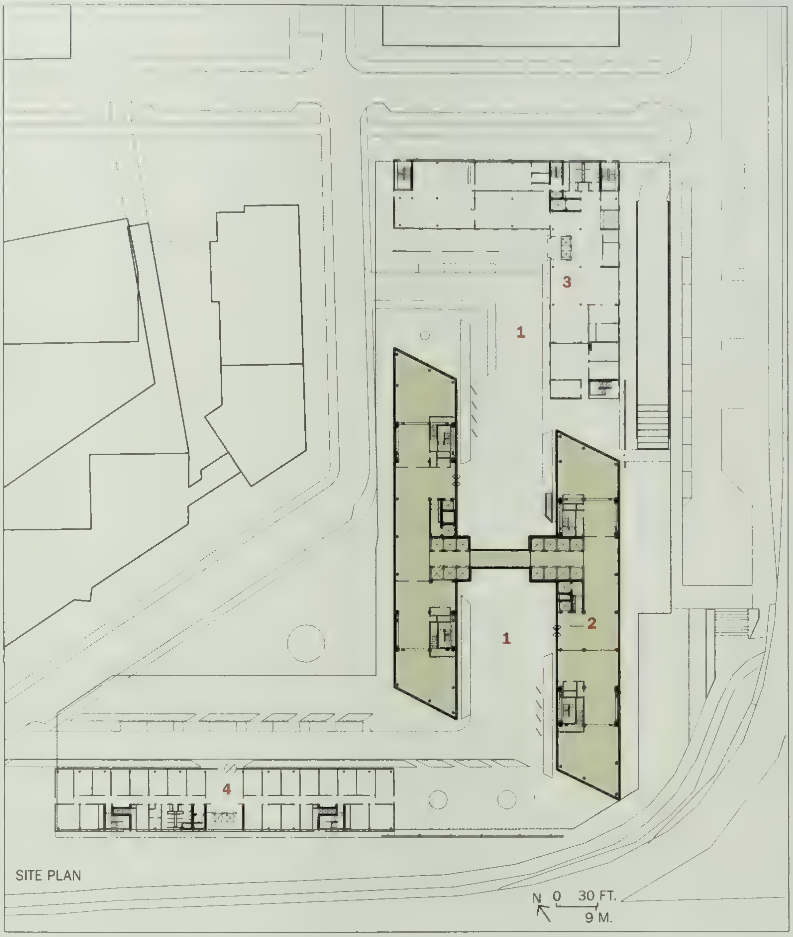
The elaborateness of these multiple systems (by American standards) is offset by a gain in usable space that accrues because the building has no need for a rooftop mechanical penthouse (the space, roof glazed, is rented instead) and avoids extensive conventional duct-

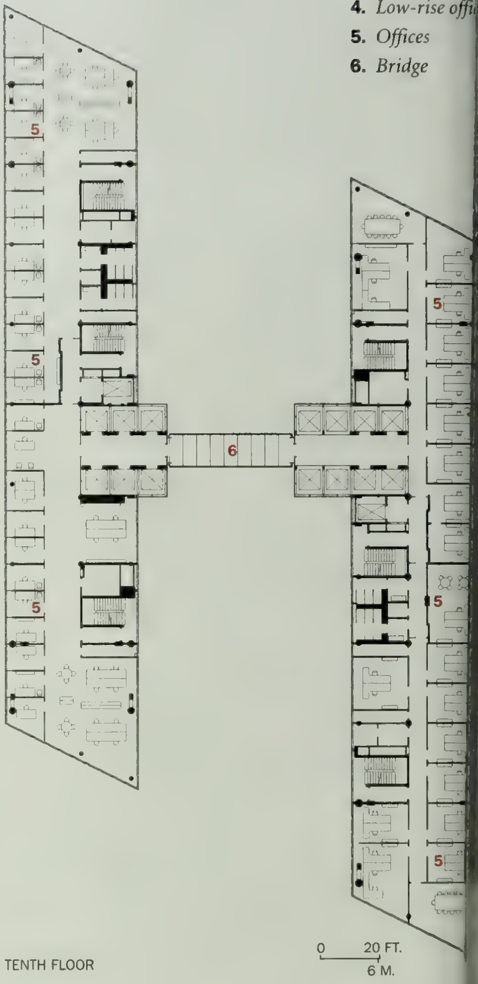


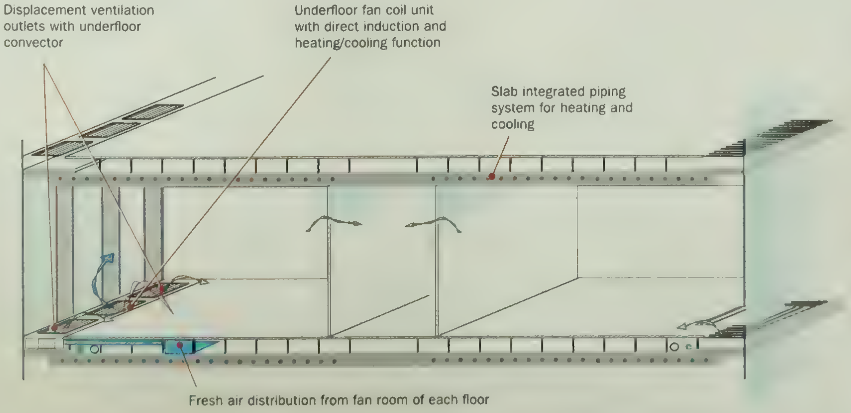


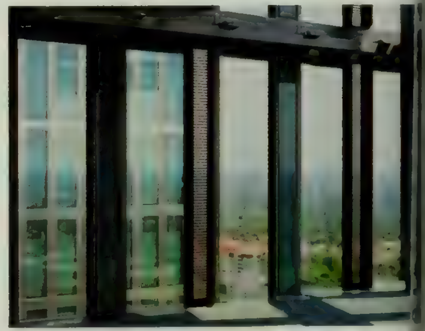
Jahn, with Werner Sobek, dematerialized the glassy bridges and elevator shafts, creating a stunning impression from the entry drive (with the hotel visible beyond).

1. *Entry drive*
2. *Tower*
3. *Low-rise hot*
4. *Low-rise offi*
5. *Offices*
6. *Bridge*

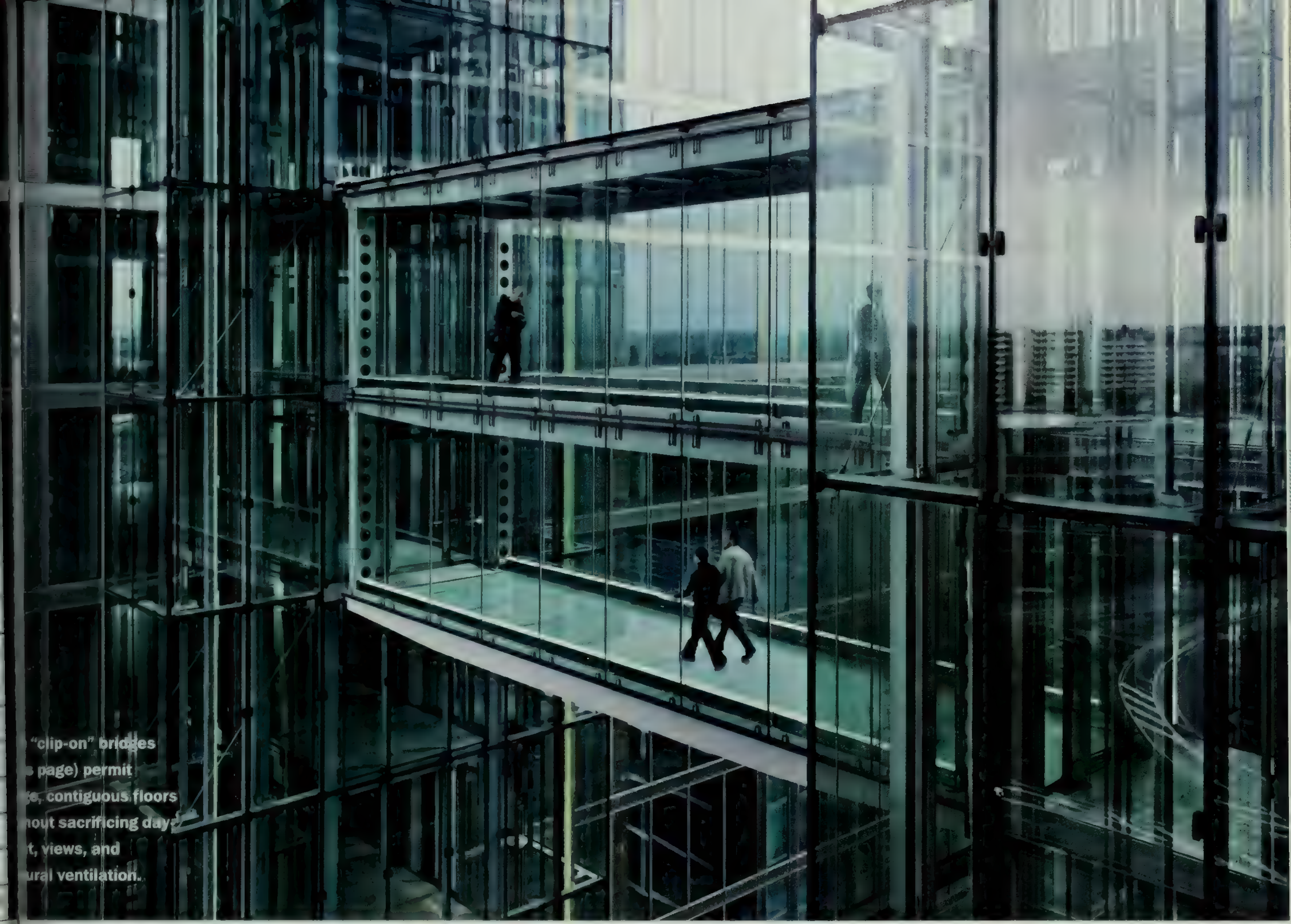





Displacement ventilation outlets with underfloor convector
Underfloor fan coil unit with direct induction and heating/cooling function
Slab integrated piping system for heating and cooling
Fresh air distribution from fan room of each floor



The Munich towers alternate sealed triple-glazed windows with operable lites protected by perforated steel panels (above) part of a natural ven lation scheme (left) augmented by small fan-coil units.



"clip-on" bridges
page) permit
e, contiguous floors
hout sacrificing day-
t, views, and
ural ventilation.

k and shafts.
In the hotel, Jahn turned to his
rior design firm, Jahn Lykouria
ondon. They designed chairs,
es, even the three-watt LED
ding lamps mounted flush in the
dboards. Sleeping areas flow
glass-enclosed baths fitted with
-shaped, stainless-steel sinks
lass countertops. Since Jahn did
want to interrupt the door-size
dows with railings, local authori-
will only permit them to open a
inches, for safety. The restau-
shows the same maximum
ntion to Minimalist detail, with
nderlit glass bar over a bam-
floor, projection screens, and
e plate-glass panels held in
mullions.

nmentary

just technically innovative, the
ect has become an urban land-

Few columns obscure the panoramic views (top). Large, triple-glazed windows alternate with narrow panels that open to breezes (bottom).

mark—honed to a simplicity that keeps it sophisticated. I had not expected the towers to be so magnetic in person. They draw your gaze from different vantages because of the intriguing way their relationship to each other changes. With the project's inwar focus and hidden entrances, it is not pedestrian friendly at street level now, in spite of the open space. That should change if the towers help to draw new development, animating the street. In their prominent and convenient location, the Highlight Towers als are waking up Munich, whose citizens liken their city to Sleeping Beauty's castle submerged in slumber. They join the recently completed Allianz soccer stadiu by Herzog & de Meuron and Coo Himmelb(l)au's BMW Welt experience center opening next spring.

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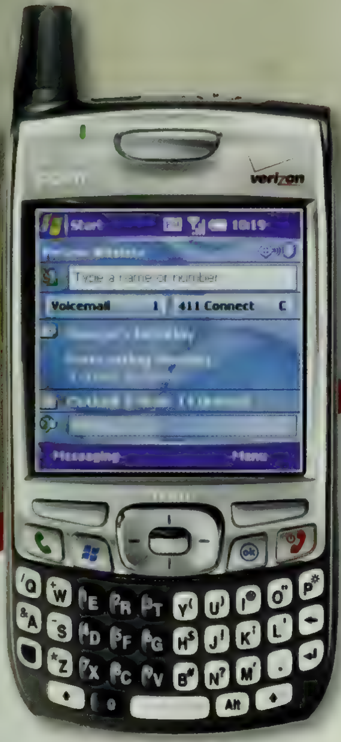

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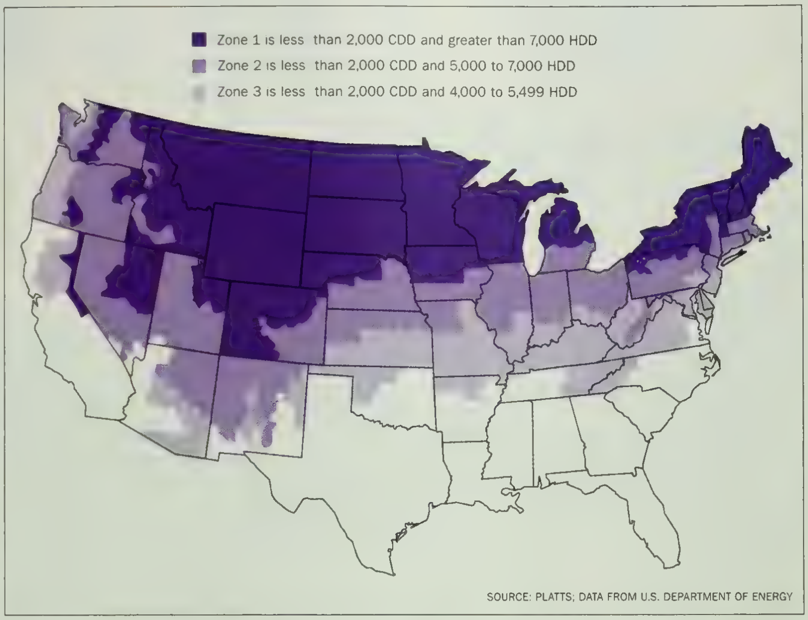
Can a New Kind of Heat Pump Change the World?

N ELECTRIC-BILL-BURDENED ENGINEER HAS DEVELOPED WHAT THE HVAC INDUSTRY HAS IGNORED: A HEAT UMP THAT WORKS WHEN THE TEMPERATURE IS BELOW ZERO. WILL CONSUMERS BEAT A PATH TO HIS DOOR?

Charles Linn, FAIA

When David Shaw got a $400 electric bill in 1995, he was inspired. He had recently retired from his job as compressor designer and refrigeration engineer at the Carrier rporation, and had moved into a New Britain, nnecticut, condominium that was heated and cooled by air-source heat pump. "It worked great," he says, "except en it got cold. The air-conditioning industry never devel-ed a heat pump that could heat a home when it is really ld outside." So, Shaw set up an R&D lab, Shaw Engineering sociates, and started developing the heat pump that could.

Everyone loves the idea of heat pumps, because as if they give us something for nothing. Conventional -source models heat or cool using thermal energy that is turally present in the air, and their cousins, geothermal at pumps, tap the heat that is present in earth or water. ese devices "compress" this energy to yield temperatures quired to condition interior space. Air-source types are mmonly used to condition homes and small commercial ildings in the southern part of the U.S. and in many parts the world. Yet they've always been very expensive to use ere ambient outdoor temperatures begin to approach d go below freezing and, as the map indicates, that leaves most of the S. out in the cold. The reason for this is that as temperatures fall, heat mps become less and less efficient. So, most use electric-resistance heat- as a backup when a severe cold snap occurs. But that's a bit like making ildings into giant toasters—resistance heating is not only terrible from efficiency standpoint, but when hundreds of thousands of resistance heaters go online at the same time, electric utilities experience peak-loading. Their distribution systems are taxed, they must bring extra power plants online to meet demand, and they pay dearly to buy power from other utilities. Utility companies build these costs into their retail customers' base rates.


Zone 1 is less than 2,000 CDD and greater than 7,000 HDD
Zone 2 is less than 2,000 CDD and 5,000 to 7,000 HDD
Zone 3 is less than 2,000 CDD and 4,000 to 5,499 HDD

SOURCE: PLATTS; DATA FROM U.S. DEPARTMENT OF ENERGY

Platts E Source expects that the low-temperature heat pump will be competitive with conventional heat pumps and central air in Zones 1 and 2. In Zone 3, utility companies would likely have to provide consumers with incentives to get them to make the switch.

The absence of viable low-temperature air-source heat-pump (LTHP) technology has left the geothermal heat pump as the only practical alternative for people who wish to use heat pumps in cold climates. The first-costs for these systems is higher than it is for fossil-fueled heaters because they are complex, and the systems that draw heat from natural sources can be difficult to install. Payback periods for them can be reasonable, but many urban and suburban sites are unsuitable because they lack either the real estate needed for ground loops or sources of water.

From a thermodynamics standpoint, the LTHP has always been possible, and Shaw says that most of the knowledge and components necessary to make LTHPs have been around "since I got in the business in 1958," but they were never developed. Low prices for fossil fuels, and low first-costs for equipment have assured that furnaces and boilers continue to dominate the U.S. space-heating market. This didn't deter him, and he tackled the problem in the mid-1990s, knowing full well the market forces needed to make the product a home run might not converge for years. Considering what is now known about global warming, and unprecedented prices for fossil fuels, it might be time for the LTHP to start changing the world, because it seems impossible that millions of individ-

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 168 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include several sponsored sections beginning on page 173.

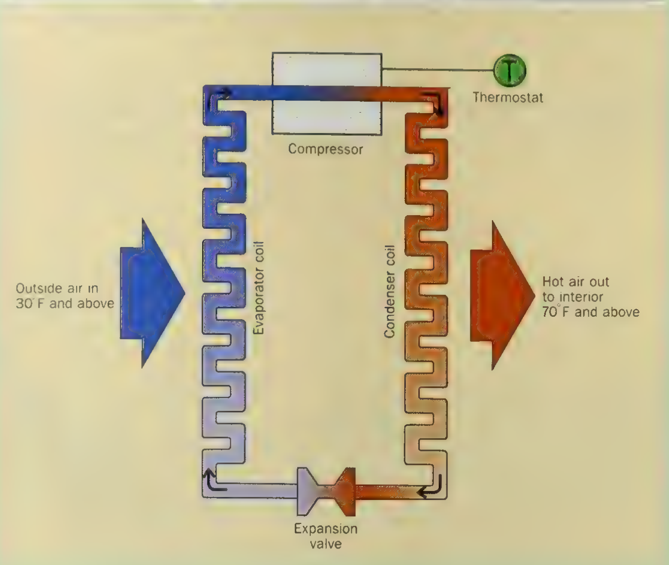
LEARNING OBJECTIVES

After reading this article, you should be able to:

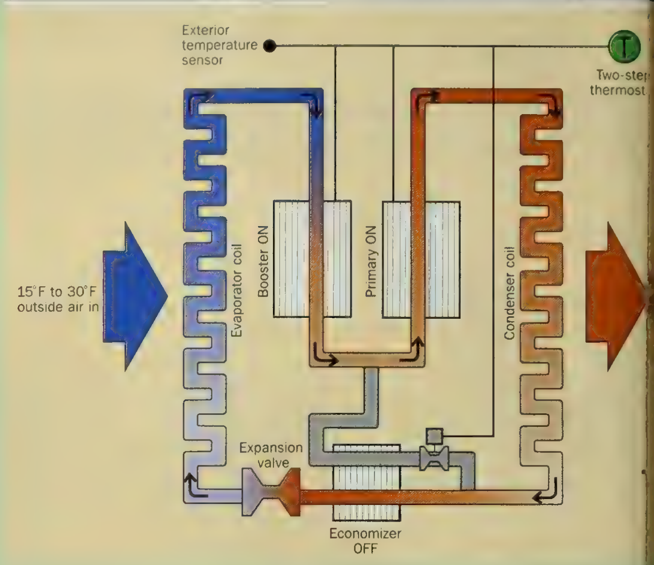
1. *Explain the difference between types of heat pumps.*
2. *Describe how a heat pump works.*
3. *Discuss solutions to using heat pumps in cold climates.*

this story and more continuing education, as well as links to sources, ite papers, and products, go to **www.archrecord.com**.

1. CONVENTIONAL HEAT PUMP



2. LOW-TEMPERATURE HEAT PUMP-STAGE 1



The difference between a conventional heat pump (above left) and the LTHP is the addition of a second "booster" compressor and a "subcooling economizer," which is a heat exchanger. In Stage 1 mode (above right), the booster compressor is activated when the outside temperature reaches 25 degrees Fahrenheit. The extra capacity it provides allows a much greater quantity of low-density refrigerant to be compressed into the liquid required to bring heat to the interior of the building. In Stage 2 (opposite), the economizer kicks in. It is a heat exchanger that uses heat usually wasted to produce refrigerant vapor sent directly to the primary compressor, instead o into the evaporator co

ual residential and light-commercial heating systems, each burning its own fossil fuels, can be sustained indefinitely. In terms of carbon production alone, it is better to have hundreds of utilities produce the power to run millions of heat pumps. Electric utilities have lots of options available to them for reducing their carbon footprint that are not available to the natural gas industry. These include carbon capture and storage, nuclear power, wind generation, and other renewables.

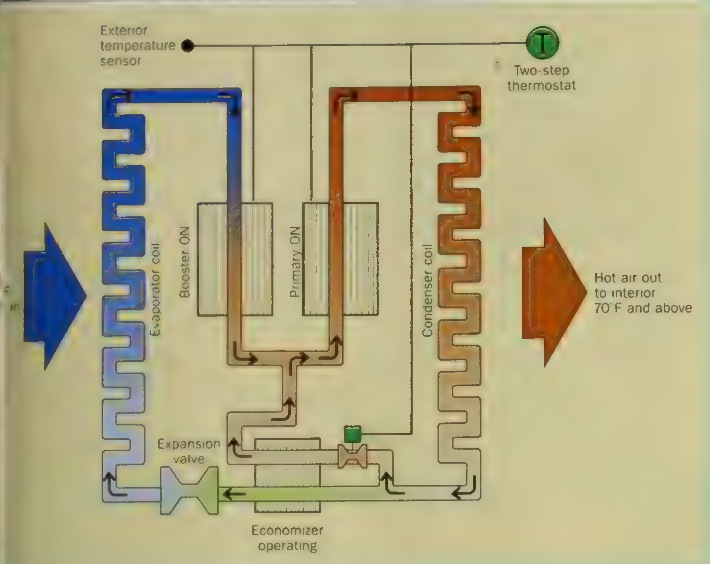
In 2005, Platts E Source, a Boulder-based consulting group that does research for the utility industry, released a report called "Can the Low-Temperature Heat Pump Defrost the Status Quo in the Space Heating Sector?" The authors, Jay Stein, Andria Jacob, and Jon Slowe, indicate that none of the major U.S. HVAC manufacturers is even doing research in the area of LTHPs. Without the market demand, the big companies simply aren't interested in the concept, even though E Source estimates that the market could be as high as 2.2 million units annually.

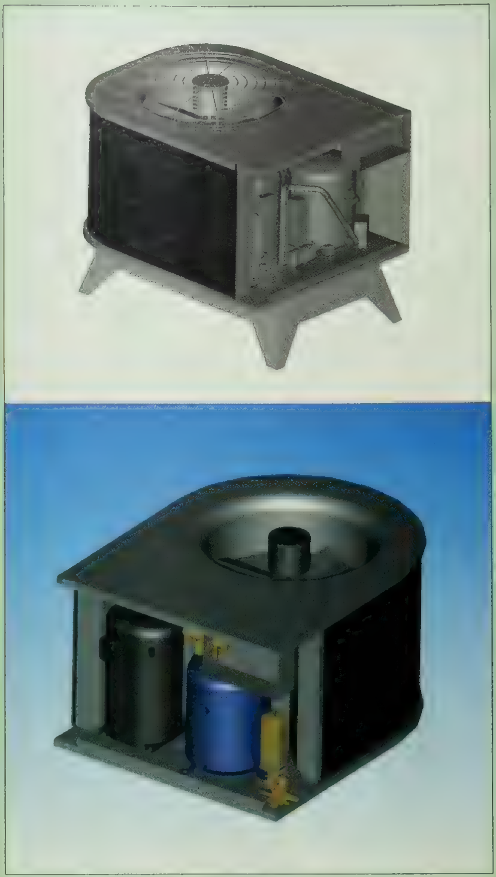
But the paper also describes how far the LTHP has to go. Very few LTHPs of Shaw's design—only between 150 and 200—have ever been installed. Nyle Special Products, of Bangor, Maine, licensed the rights to Shaw's patents for a few years and made them under the Cold Climate Heat Pump name between 2002 and 2005. A number of electric utilities conducted tests of the Nyle product with mixed results, mostly due to manufacturing glitches and installation problems. When they worked, they worked very well. But Shaw decided to take his patents elsewhere, and Nyle can no longer manufacture the products that used them. Shaw has become the chief technology officer of a new company, Hallowell International (http://www.gotohallowell.com), also of Bangor. Hallowell hopes to start producing 2000 LTHPs for beta testing this ye Shaw also says that his company's heat pump will only cost about 20 p cent more than conventional heat pumps, which doesn't seem like mu of course. But, as long as heating with natural gas or heating oils cheaper than heating with electricity month after month, year after ye it will be hard to persuade consumers to buy them. On the other ha utility companies often use economic incentives to push new techno gies out to consumers. Those that have excess capacity to sell in win or experience peak-loading conditions at this time of year, are very int ested in the product.

Heat Pumps 101

Here's a refresher course on heat-pump basics. Refrigerants are the li blood of every heat pump, refrigerator, or air-conditioning system. The materials are extremely efficient at absorbing thermal energy in one pla and moving and releasing it in another. Water is often used to move th mal energy in heating and air-conditioning. But the refrigerants used heat pumps have many advantages over water. They don't freeze at 2 degrees Fahrenheit, and they boil at temperatures that are much low than 212 degrees Fahrenheit. Their boiling points can also be raised lowered significantly by pressurizing or depressurizing them, so when where they are changed from a liquid state into a vapor or gas can be co trolled. That's very useful, because it is when they are changing states th they do their work, absorbing heat when they are changing from a liq to a gas, and releasing it when they are changing from a gas back into uid. Old ozone-depleting refrigerants have been replaced by new o

3. LOW-TEMPERATURE HEAT PUMP-STAGE 2





The LTHP has legs (top) to keep it out of snow and ice, which improves winter efficiency. The gray cylinder is the booster compressor; the gold-colored box is the economizer (right).

are also much more efficient at absorbing and giving up heat. Today, 0A is the most commonly used refrigerant for both residential and t-commercial systems.

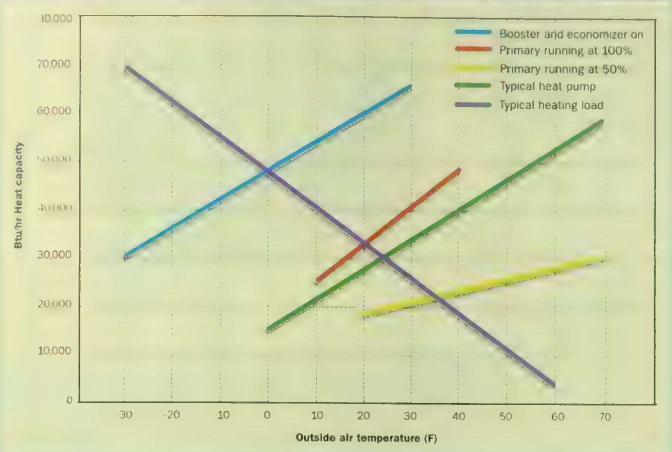
To understand how refrigerant works, imagine a closed bottle of it sitting in a cold place, and assume the container is partly full of iid refrigerant and partly of the refrigerant in a gaseous state. If it was ved to a warm place, it would gradually absorb heat from its surndings, and as it did so, the liquid refrigerant would boil, evaporating a gas. The pressure inside the bottle would increase until the boiling pped, because as the pressure in the bottle increased, so would the temature at which the liquid boils. If the bottle was put back in a cool place, vapor would give up heat into its surroundings, condense back into iid, and the pressure in the bottle would decrease.

Now suppose that the bottle is replaced with a closed loop of ing filled with refrigerant, half of it inside a building, where it's m, and half outside, where it's cold. The refrigerant inside the tubing ıld change states constantly, boiling, evaporating, and condensing, ving heat from the inside of the building to the outside and returnfor more. The only time it would stop changing states is when the perature inside the building equaled the temperature outside. A heat np does the opposite, using the refrigerant to gather heat from the outside of the building and move it to the interior. To do this, it is essary to add two components to the loop. One is a compressor (see osite page, diagram 1), which pressurizes vapor so it can be turned liquid inside an assembly, called the condenser. The condenser is de up of coils of tubing running through sheet-metal fins, which is installed downstream from the compressor. It provides lots of surface area, so the heat in the refrigerant can be transferred to the air efficiently when it condenses. When a heat pump is being used to heat a building, the condenser is placed inside, adjacent to a fan that forces the warm air into ductwork.

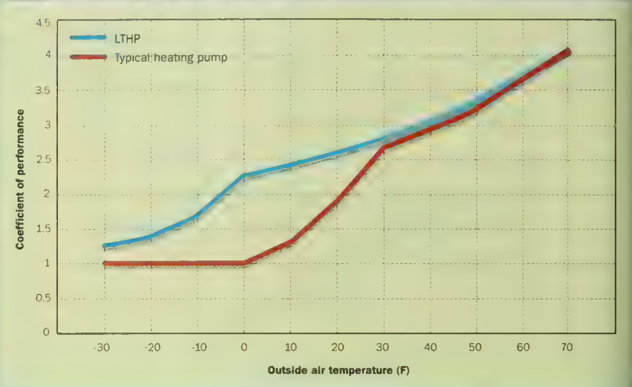
The other component needed to make a heat pump from the loop of refrigerant-filled tubing is an expansion valve. This device is placed downstream from the condenser. It restricts the flow of the refrigerant inside the condenser so the compressor can build up pressure that's necessary to condense the gas into a liquid. It also keeps this liquid from leaving the condenser before the heat it contains has fully transferred out of it. Expansion valves can be modulated, so that the amount of pressure in the condenser is variable, and the rate the condensed liquid leaves the condenser can be controlled. The pressure downstream from the expansion valve is much lower than it is in the condenser, so when warm liquid refrigerant leaves the condenser and is forced through the expansion valve, where the boiling point is also lower, some of it "flashes" into vapor. The temperature of liquid that left the condenser now becomes cold as it enters an assembly of pipes and sheet-metal fins, called the evaporator, which sits outside the building. It is at this point that any heat that remained in the warm liquid refrigerant after it left the expansion valve is boiled off into cold vapor. As it changes state, it absorbs heat from the outside air, helped along by the evaporator's large surface area. Soon, the thermal-energy-laden vapor is on its way back to the compressor to start the cycle all over again.

What differentiates a heat pump from an air conditioner used

3-TON LTHP HEATING CAPACITY BTU/HR VS. TYPICAL HEAT PUMPS



3-TON LTHP VS. TYPICAL HEAT PUMP USING BACKUP RESISTANCE HEATING



The top graph shows how well different parts of an LTHP keep up as the temperature drops. With everything running, an LTHP keeps up with heating load until 0 degrees Fahrenheit, while conventional heat pumps bottom out at 25 degrees. The graph at right shows coefficients of performance. At 0 degrees, the LTHP makes twice as much heat per unit of electricity input as the conventional heat pump.

strictly for cooling is that the direction of the refrigerant flow can be reversed—the evaporator and condenser can be switched end-for-end, so one can deliver either heat or cooling to the inside of a building. In cooling mode, the condenser is outside, and the evaporator is inside.

Efficiency counts: how the LTHP works

As the temperature starts getting near freezing outside, the amount of heat that can be absorbed by the liquid refrigerant boiling in the evaporator decreases. This is because the pressure of the boiling liquid (measured in pounds per square inch) inside the evaporator decreases, and so does the density of the vapor (measured in pounds per cubic foot) the boiling liquid turns into. This causes two problems. First, the compressor has to work harder to pump it because the pressure has dropped. Second, because the amount of heat that vapor can carry is proportional to its density, the compressor doesn't have the capacity to deliver sufficient heat from the outside air to keep the inside of the building warm. As the temperature continues to go down, the situation worsens and, at 30 degrees Fahrenheit, the backup resistance built into most air-source heat pumps turns on.

A LTHP WILL COST ABOUT 20 PERCENT MORE THAN A CONVENTIONAL AIR-SOURCE HEAT PUMP, ACCORDING TO ITS INVENTOR.

The most obvious way to solve the problem would be to put a really big compressor into the system. But when it's not very cold outside, this overcapacity would cause the system to be so inefficient that it would be counterproductive. So instead, Shaw decided to add a second compressor, which he calls a *booster compressor* (see page 164, diagram 2). This is installed between the evaporator coil and what he calls the primary compressor—the compressor that's already present as standard equipment every heat pump. Most of the time, the booster compressor would bypassed, and only the primary would compress the vapor that is gen ated in the evaporator. When the vapor pressure and density dropp below a certain point, however, the booster compressor would be allow to come on if the outdoor air temperature had dropped below a certa point and the thermostat inside the building is also calling for more he The booster compressor has a much larger displacement than the typi primary compressor, so when it is enabled, it can move many more cu feet of vapor per minute. The LHTP's performance can be enhanced in t future when variable speed booster compressors are introduced.

Shaw also knew that in most heat pumps, even after the liq refrigerant has given up much of its heat to the condenser, it is still pre warm. When it gets really cold outside, this warmth causes as much as percent of that liquid to vaporize as it goes through the expansion val It would be better if it cooled first. That way, more of the refriger would remain in liquid form, so it could be boiled later on in the evap rator coil, where it absorbs heat from the outside air while changi states. Shaw figured that one way to cool the refrigerant would be "donate" some of its surplus heat to a process that would create a sou of high-density vapor that would bypass the evaporator coil altoget and be sent directly to the primary compressor.

Shaw calls the device he uses to do this a *subcooling economi* (see page 165, diagram 3). It is a heat exchanger that is placed betw the condenser and the expansion valve. It splits the refrigerant liq coming from the condenser into two streams. The majority of the refr erant passes through one side of the heat exchanger, where it gives up heat necessary to vaporize a smaller stream of refrigerant being fed i the other side of the exchanger. This vapor is then sent to a pe

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between the booster compressor and the primary compressor, while the larger stream of liquid refrigerant, now cooled significantly, is sent through the expansion valve and on to the evaporator coil, where it boils into vapor.

The LTHP wouldn't work if it weren't for an impressive array of sensors and controllers that place the different components in the system into action in the proper sequence at the proper time. Energy is never used to supply excess capacity to the system. The indoor thermostat is a two-step model, which alters the capacity of the system based on small variations in indoor air temperature. When the thermostat first calls for heat, only 50 percent of the primary compressor's capacity is energized until the outdoor ambient air temperature drops to 40 degrees Fahrenheit, when the primary compressor begins working at 100 percent of capacity. The booster compressor won't come on until 25 degrees, and only if the second step of the thermostat calls for it. At 5 degrees, the subcooling economizer is activated, but again, only if the second step of the thermostat calls for it.

How well LTHPs perform

The graphs on page 166 show the actual performance of the LTHP units that are now under development at Hallowell International, according to measurements taken in the company's labs. Shaw says they have been verified by an independent lab, as well. Above 30 degrees Fahrenheit, the energy efficiency of the LTPHs is fairly consistent with most common heat pumps, but as Shaw says, "Below 30 is where the action is." One of the graphs shows the performance of a 3-ton LTHP, in Btu per hour, compared to a conventional heat pump, as the exterior temperature falls. At 0 degrees, with the economizer, primary, and booster compressors all running, the LTHP keeping up with the heating load, but the air-source heat pump cann keep up below 25 degrees. The other graph shows coefficients of perforr ance (COP) for the two heat-pump types. The COP is the ratio of t energy transferred for heating to the input electric energy used in t process—the higher the COP, the more efficiently the unit operates. Belc 30 degrees, the efficiency of the heat pump using resistance heating dro very quickly. At 0 degrees, the typical air-source heat pump has basica stopped producing any heat and is using only its electrical-resistance he which has a COP of 1, while the COP for the LTHP is 2.23.

So, can the LTHP change the world? Not just yet. E Source's stu ies show that the calculation of an owner's payback for installing one, compared to a furnace, differs greatly by region and involves such variab as prevailing costs for fossil fuels, electric rates, and weather conditio Often, both furnaces and water heaters have to be changed to electric mc els in order to make the numbers work, so utility companies will have embrace the technology and push it to their customers aggressively.

For any innovation in the HVAC industry to succeed, sales, d tribution, and installation training obstacles have to be overcome, not mention the kind of manufacturing problems that plagued the first gen ation of LTHPS that made it into the field. Probably, the hardest thing overcome is cultural: It's simply the reluctance of both utility compan and consumers to place their trust in a new product, even if the technol gies that made it possible aren't new. Hopefully, the optimism that inspi David Shaw to come this far will continue to encourage him and his co pany to keep trying. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article "Can a New Kind of Heat Pump Change the World?" using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers (page 236).
- ◆ Fill out and submit the AIA/CES education reporting form (page 236) or download the form at www.archrecord.com to receive one AIA learning unit.

QUESTIONS

1. Geosourced heat pumps tap the heat that is present in which?
  a. earth and air
  b. air and water
  c. earth and water
  d. earth and rock

2. Which do heat pumps compress in order to achieve desirable temperatures?
  a. energy
  b. air
  c. water
  d. refrigerant

3. As temperatures fall, typical heat pumps do which?
  a. become less efficient
  b. become more efficient
  c. become a toaster
  d. quit working

4. Geothermal heat pumps are not used in urban areas for which reason?
  a. lack of earth depth
  b. lack of adequate water sources
  c. lack of fossil fuel
  d. lack of bedrock

5. When the refrigerant in a heat pump is changing from liquid to gas, it is doing which?
  a. releasing heat
  b. absorbing heat
  c. storing heat
  d. converting heat

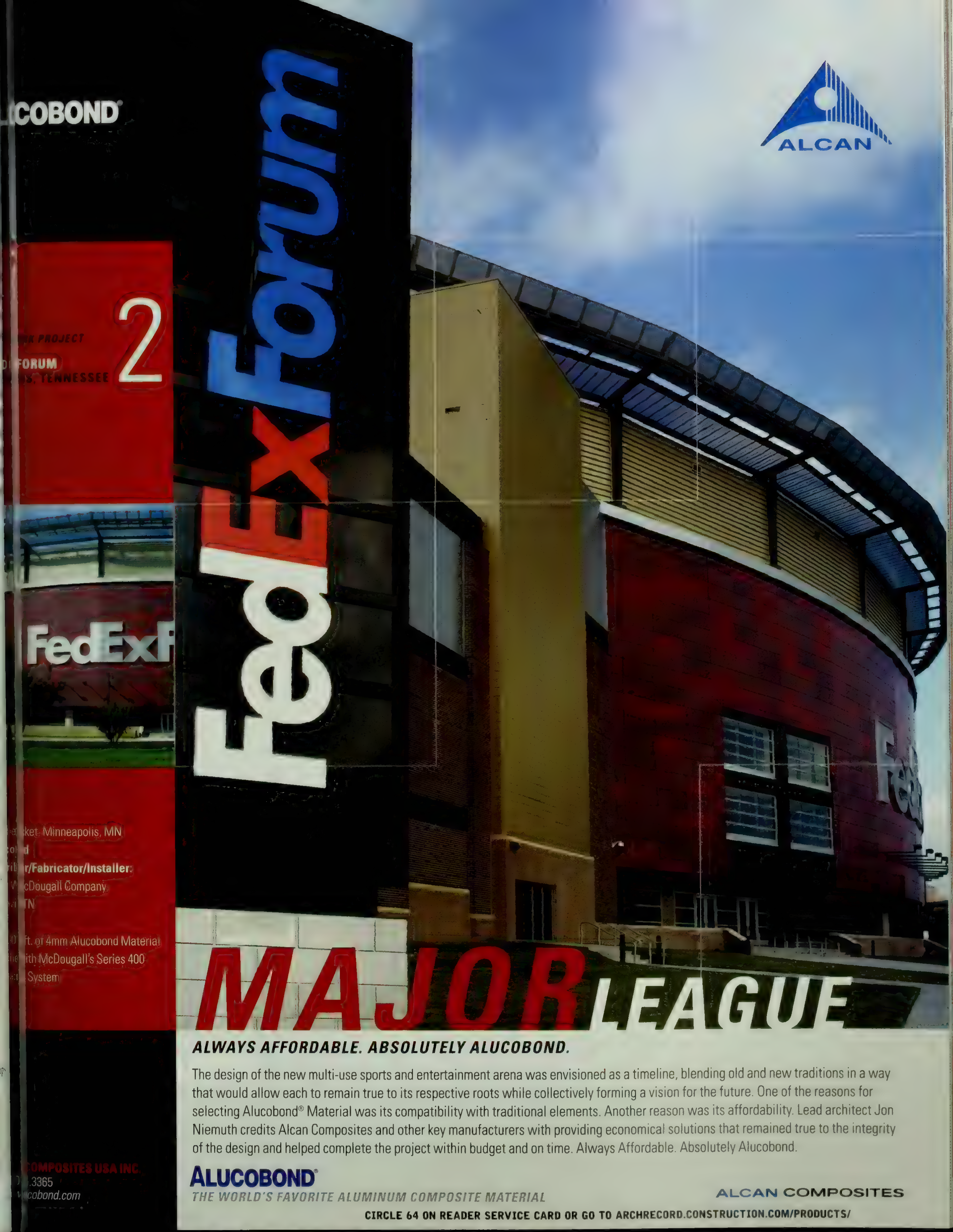
6. The freezing and boiling points of refrigerants can be changed by which?
  a. cooling
  b. heating
  c. pressurizing
  d. vaporizing

7. The device that restricts the flow of refrigerant is which?
  a. condenser
  b. compressor
  c. tubing
  d. expansion valve

8. When the warm liquid refrigerant is forced through the expansion valve, it does which?
  a. flashes
  b. the boiling point drops
  c. instantly boils
  d. all three above

9. A heat pump is differentiated from an air conditioner by which?
  a. the pressure of the refrigerant is reversed
  b. the volume of the refrigerant can be altered
  c. the expansion of the refrigerant can be controlled
  d. the direction of the refrigerant can be reversed

10. The low-temperature heat pump is more efficient than other heat pumps below which temperature?
  a. 10 degrees Fahrenheit
  b. 20 degrees Fahrenheit
  c. 30 degrees Fahrenheit
  d. 40 degrees Fahrenheit



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Tech Products

Stretching the digital imagination

James Murdock

robat 3D
obe Systems
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ndows

obe Systems has added a new iension to its Acrobat product te—literally. Acrobat 3D includes of the features available in obat 7.0 Professional plus the lity to create PDF files that fea- e detailed 3D models. Using the tware, designers can import ects from CAD programs such MicroStation without the native deling software installed on their nputers. Then, within the Acrobat horing environment, they can ate objects, change the color or ohic style, create cross sections, nate models, create walk- ughs, and more.

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every architect who has fanta- d about an easy way to warp extrude rectilinear volumes in iiCAD without using special pts or GDL editing, MaxonForm ht be the right solution. Based Cinema 4D, a free-form modeling gram used mainly by the enter- ment industry, MaxonForm is a -in for Graphisoft's ArchiCAD ware. It allows architects to lel organically within ArchiCAD's ual Building platform, using basic oes such as cubes, pyramids, cones, cylinders, and spheres, as well as polygon forms, including arcs, bezier curves, and b-splines.

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Offering something for A&D firms of all sizes, FormFonts provides an inexpensive online library of 3D objects and 2D images of items such as windows, cars, trees, and shingles. For a monthly fee of $11, subscribers can download thousands of objects from FormFont's Web catalog directly into their CAD programs. The service is ideal for smaller firms that lack the time and resources to create such a library themselves, while its optional online storage can help larger firms that want an easy, secure way of sharing proprietary styles among multiple offices.

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NetBlender
www.netblender.com
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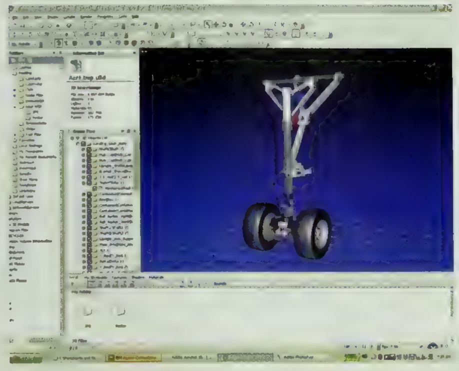
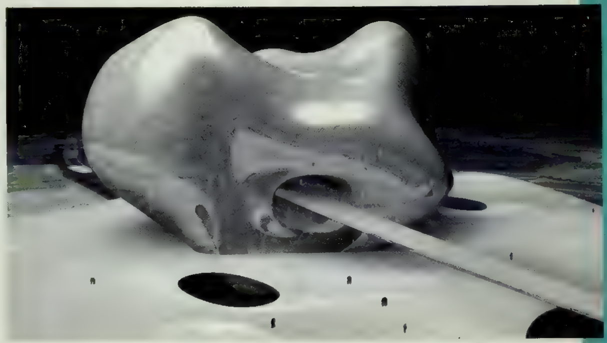
DVDs are great for delivering high-quality photos, plans, and other files to clients, but the format's creators failed to anticipate one feature: DVDs cannot "talk" to the Internet. NetBlender enables DVD programmers to embed active hyperlinks on a disc, thereby creating a viewing environment in which the end user seamlessly shifts between stored content on the disc and additional content, such as streaming video, on the Web. For architects who want to package their portfolios or proposals on DVD, this software eliminates any guesswork for clients surfing the Web for additional or updated information.

more information on technology rchitects, including ews, vendor lists, and links, go igital Architect at **v.archrecord.com**.

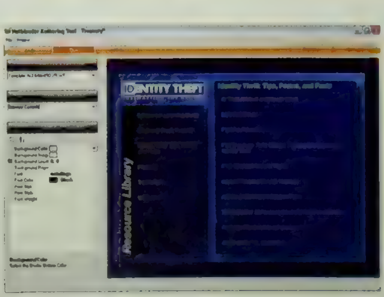


Acrobat 3D, the latest offering from Adobe Systems, creates PDF files that feature detailed 3D models.



MaxonForm is a plug-in for Graphisoft's ArchiCAD software.

FormFonts provides an inexpensive online library of 3D objects and 2D images of items such as windows, trees, and shingles.



NetBlender software allows DVDs to "talk" to the internet, offering viewers additional or updated information.

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xploring the ligh-Performance Benefits of aminated Glass

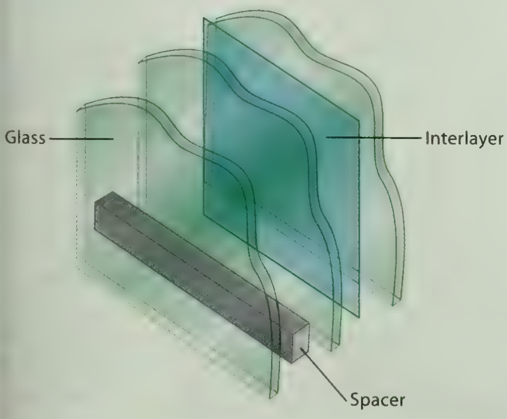
atile Building Material Provides Multiple Advantages

ed by Solutia Inc. and Viracon

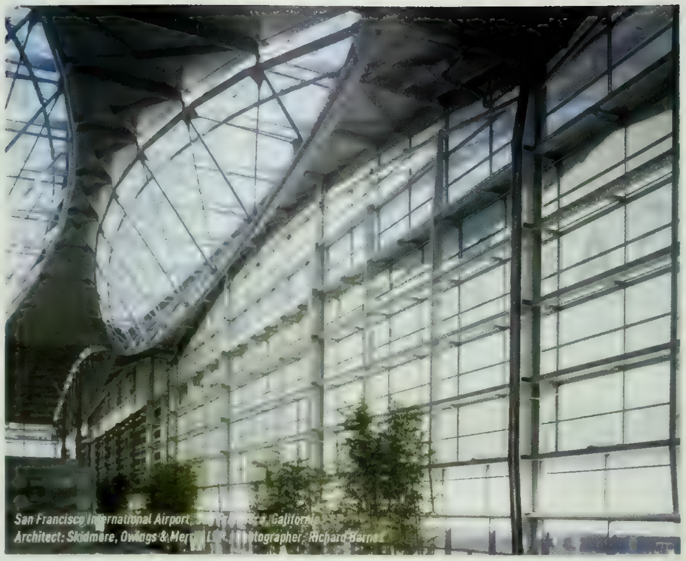
al terrorism and natural disasters have emphasized the need for architects to ress emerging design challenges regarding safety, security, sustainability, and efficiency. As the building industry examines these performance issues and design , architects are increasingly turning to laminated glass because of its many high nance benefits.

aminated glass is a relatively new architectural product in the United States, it has popular design tool in Europe for many years. Europe's experience with blasts and disasters has led many countries to place a premium on the safety and security of tizens, especially in public buildings. Standards vary by country, but generally all nent and public buildings including hospitals, daycare centers, airports, post and train stations, must be built to withstand blast. In addition to the safety, /, and sound reduction benefits it affords, laminated glass also contributes to ability goals, which has further driven demand in many European countries.

ted glass is formed by permanently fusing an interlayer between two pieces of glass eat and pressure. It is rapidly becoming a popular alternative to the often-specified tempered glass in safety and security applications. Unlike tempered safety glass, which breaks into small pieces instead of sharp shards, laminated glass remains in the frame, maintaining the building envelope and protecting building contents. Laminated glass also offers multiple security, sound, safety, daylight, and energy benefits, unlike tempered glass.



s the main component in laminated glass. The fused interlayer and glass on as a single unit and can be used in almost any configuration. Used in an ating glass assembly (pictured above), laminated glass can help improve the nal and sound-reduction performance of a glazing unit.



San Francisco International Airport, South San Francisco, California
Architect: Skidmore, Owings & Merrill LLP, Photographer: Richard Barnes

Safety

Safety glazing refers to the reduction of the risk or occurrence of injury or loss from accidental or natural causes, while security glazing refers to the reduction of the risk or occurrence of injury or loss from the deliberate or intentional human actions. Safety glazing is specified to protect people from injuries due to accidental glass impact, breakage or fallout, and laminated glass is rapidly emerging as a powerful and versatile safety glazing option. Upon impact, ordinary glass typically shatters and falls from the window frame, which can result in serious or even fatal injuries to building occupants and passers-by. Used in a properly designed system, laminated glass windows may crack, but fragments tend to adhere to the interlayer, reducing hazards associated with falling or flying glass.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Laminated Glass.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 177, then follow the reporting instructions on page 239 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Understand how laminated glass addresses design and safety challenges.*
- *Recognize the benefits of laminated glass during hurricanes and earthquakes.*
- *Explain why laminated glass offers a high degree of security protection.*
- *Discuss how laminated glass reduces sound transmission.*
- *Identify the sustainable, energy-efficient performance qualities of laminated glass.*

Laminated glass is versatile and suitable for almost any desired configuration. By using laminated glass as the inboard component of an insulating unit, the assembly provides the thermal performance of an insulating air space along with the safety glazing of the inboard laminate.

In appropriate configurations, laminated glass meets all requirements set forth in architectural glazing safety sections of major model building codes and test standards such as the Consumer Product Safety Commission (CPSC). Category I certification requires the glazing to withstand one 150 foot-pound impact, produced by impacting a 100-pound shot bag from a vertical height of 18 inches. Category II certification requires the glazing to withstand one 400 foot-pound impact, produced by impacting a 100-pound shot bag from a vertical height of 48 inches.

SAFETY GLAZING REQUIREMENTS – CONSUMER PRODUCTS SAFETY COMMISSION

	CATEGORY I	CATEGORY II
Definition	9 sq. ft. or less, except patio doors, shower and tub enclosures	Greater than 9 sq. ft. and patio doors, shower and tub enclosures of any size
Test Requirement*	Break safely at 150 ft.-lb. impact	Break safely at 400 ft.-lb. impact
Test Standard	CPSC 16CFR 1201 Category I or equivalent model code standard	CPSC 16CFR 1201 Category II or equivalent model code standard
Complying Laminated Glass Made with PVB	Two-ply with 0.015 in. PVB interlayer or greater	Two-ply with 0.030 in. PVB interlayer or greater

Safety Glazing Requirements – Consumer Products Safety Commission

Laminated glass has also been shown to meet Underwriters' Laboratories (UL) standard UL972 for security glazing, as well as Class I of the American Society of Testing and Materials (ASTM) International's F1233 security glazing test standard.

In vertical safety glazing applications, laminated glass has proven to be a unique design tool for entrance doors, shower and bath enclosures, storm and patio sliding doors, sidelights, and fixed glazed panels. The glass also meets significant design and safety challenges presented by sloped and overhead glazing surfaces.

Portland International Airport

Air travelers arriving at Oregon's Portland International Airport, designed by Zimmer Gunsul Frasca Partnership, are welcomed by a dramatic, 100,000-square-foot laminated glass canopy that covers and connects the parking garages, floating pedestrian bridges, and roadway leading to the terminal. Because of the sheer volume of glass overhead, safety was paramount in material selection. Laminated glass was chosen because it adheres to the interlayer and remains in its frame if impacted or broken, which makes it safe for overhead glazing applications. In Portland, the laminated glass canopy also provides acoustic insulation from the noise of overhead air traffic and allows natural light in, creating a bright, pleasant environment for travelers arriving at the airport.

Architect: Zimmer Gunsul Frasca Partnership
Photographer: Wes Thompson

Portland International Airport, Portland, Oregon.

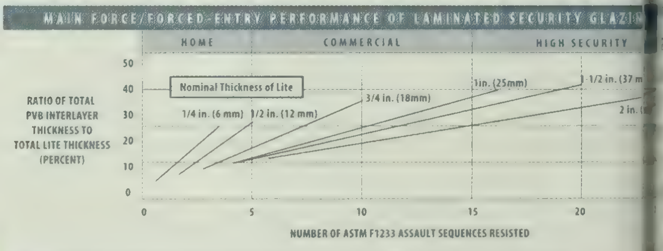
Security

Around the world, architects and building owners are seeking to balance the desire for
and working in bright, daylit spaces with the need for security protection against cri
and terrorist attacks.

Burglary and Forced Entry Resistance

Burglaries in commercial buildings and residences are usually directed towards targ
easy opportunity and low perceived risk. The most critical step of a burglary is entry
the most common means of entry is a window or door.

In correct configurations, laminated glass meets the requiremen
significant test standards including: UL972 of laminated glazing pro
against forced entry, ASTM International and other test standard
security in Home, Commercial and High Security categories. While
forms of laminated glass are considered strong enough to prevent "s
and grab" burglaries, systems can be designed with appropriate g
thicknesses to resist most weapons used to force entry, including:
hammers, screwdrivers, bricks, pry bars, sledgehammers, pipes, bat
rams, chisels, axes, thermal stress weapons (CO2, fire extinguishe
propane torches), and chemical deterioration weapons (gasoline
acetone). Even quiet glass cutters become useless tools be
laminated glass cannot be cut from only one side. Security glazing pro
with the greatest overall thickness and largest percentage of inter
offer the best resistance to forced entry.



* Data is based on samples tested and is not guaranteed for all samples or all circumstances which may vary from those present during testing.

Main Force/Forced-Entry Performance of Laminated Security Glazin

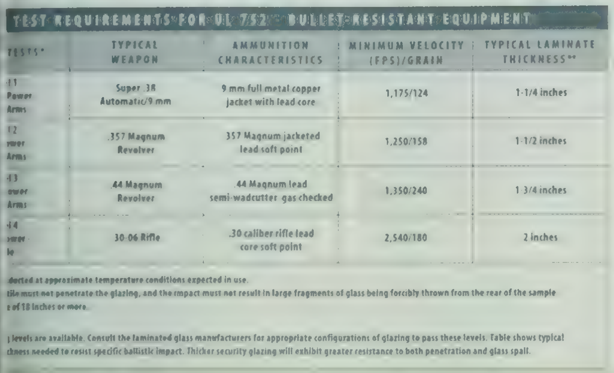
Because it withstands most forms of attempted entry, laminated glass is frequently u
enhanced security in residential and commercial windows, doors, and storefronts, pr
an aesthetically superior alternative to iron bars. Unlike burglar alarms and other s
systems, security glazing provides continuous passive security that is not subject to
error or electronic failure. It ultimately provides greater protection by preventing
instead of reacting to an entry.

Ballistic Protection

In addition to withstanding the blows of a variety of objects during an attempted bu
laminated glass offers protection against ballistic (bullet) attack. In specific b
configurations, laminated glass can reduce the risk of injuries from a ballistic attack w
compromising the complete visual clarity afforded by a glass system. It can also
penetration by high-velocity ballistics when constructed in multiple alternating lay
glass and interlayers.

UL test 752 tests the ability of glazing to withstand penetration by various classes o
of firearms. In order to pass certification for a certain level, the projectile (bullet) m

e the glazing and must not result in large fragments of glass being forcibly thrown witness side of the sample for a distance of 18 inches or more. Based on the UL rtain laminate thicknesses are needed to resist specific ballistic impact. Thicker glazing will exhibit greater resistance to both penetration and glass spall (tiny glass).



TEST REQUIREMENTS FOR UL 752 – BULLET-RESISTANT EQUIPMENT

TESTS*	TYPICAL WEAPON	AMMUNITION CHARACTERISTICS	MINIMUM VELOCITY (FPS)/GRAIN	TYPICAL LAMINATE THICKNESS**
1 Power Arms	Super .38 Automatic/9 mm	9 mm full metal copper jacket with lead core	1,175/124	1-1/4 inches
2 wer Arms	.357 Magnum Revolver	.357 Magnum jacketed lead soft point	1,250/158	1-1/2 inches
3 ower Arms	.44 Magnum Revolver	.44 Magnum lead semi-wadcutter gas checked	1,350/240	1-3/4 inches
4 wer le	30-06 Rifle	.30 caliber rifle lead core soft point	2,540/180	2 inches

ducted at approximate temperature conditions expected in use.
tile must not penetrate the glazing, and the impact must not result in large fragments of glass being forcibly thrown from the rear of the sample e of 18 inches or more.

levels are available. Consult the laminated glass manufacturers for appropriate configurations of glazing to pass these levels. Table shows typical ckness needed to resist specific ballistic impact. Thicker security glazing will exhibit greater resistance to both penetration and glass spall.

Test Requirements for UL 752 – Bullet-Resistant Equipment

f its demonstrated ability to withstand ballistic penetration, laminated glass is often ovide round-the-clock protection to employees in high-risk facilities such as banks control rooms, which require extreme ballistic protection and complete visual clarity.

Resistance

f the survivors of the September 11, 2001 Pentagon attack credit blast-resistant l glass with saving their lives. The impacted section of the building had just been for security upgrades, which included windows manufactured with a laminated nponent. After the explosion, these windows remained in the frames, providing occupants protection g glass shards.

at Texas Tech Glass and Testing Laboratory that approximately 75 all damage and injury mb blasts can be to flying and falling lowing an explosion. that a single square nprotected glass can s many as 100 sharp glass flying at speeds 300 feet per second. d glass provides protection and can he effects of a blast in ays. Most importantly, s people, both within ed building and in the ng area and structures. aminated glass stays within its frame during the initial blast wave and when impacted by flying debris, it reduces or eliminates flying glass to prevent injuries, and provides protection against flying debris. The glass also protects the building, reducing collateral damage, opportunity for looting, and costs to repair the targeted and surrounding buildings. The performance of laminated glass is often compared to ordinary monolithic glass based on retentivity, or ability to stay in the opening or hold on to glass fragments.

United States Federal Courthouse, Jacksonville, Florida. Architect: HLM Design. Photo courtesy of ©Solutia Inc.

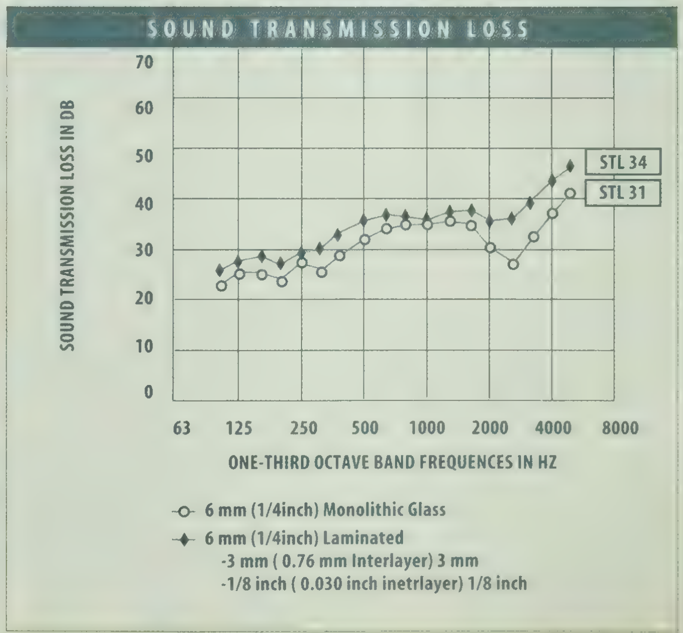
Typical Glazing Retentivity Under Blast Load
This courthouse uses insulating laminated units with low-e coatings to address safety and security, and optimize energy performance.

Because of these characteristics, laminated glass meets stringent blast-resistant standards outlined by the U.S. Department of State and the U.S. General Services Administration (GSA), and is used in many federal buildings.

Sound

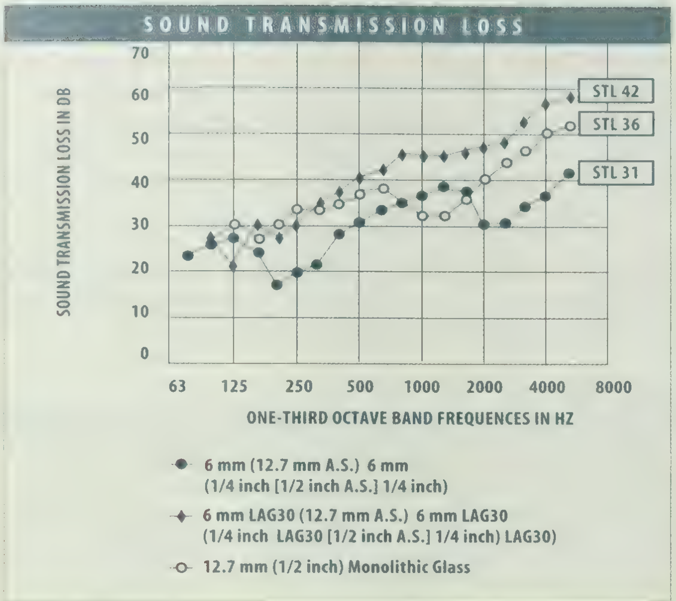
Anyone who has ridden in a luxury automobile has likely noticed the dramatic difference in perceived interior noise between luxury and economy cars. Today, the same technology used to dampen noise in cars is being used in building architecture. In many building types ranging from concert halls and office buildings to homes and schools, isolating interior spaces from exterior noise is critical, and laminated glass effectively reduces sound transmission between indoor and outdoor spaces.

Sound transmission through glass or any other building material is related to the limp/mass law. The heavier and more flexible the building material is, the better it will be at reducing sound transmissions. Because ordinary monolithic glass is essentially lightweight and very stiff, it tends to transmit more sound than other building materials.



A PVB interlayer increases glazing Sound Transmission Loss (STL) without significantly increasing the glass thickness or mass of a glazing system.

As with monolithic glass, the sound isolation performance of insulating glass can be increased significantly through the use of laminated glass.



A This figure presents a comparison between two 25.4mm (1 inch) insulating glass configurations, one using two lites of 6mm (1/4 inch) monolithic glass and the other using two lites of 6mm (1/4 inch) laminated glass (LAG). The 6mm (1/4 inch) laminated glass consisted of two lites of 3mm (1/8 inch) monolithic glass laminated together with 0.76mm (0.030 inch) PVB interlayer. As a reference, the STL for 12.7mm (1/2 inch) monolithic glass is provided.

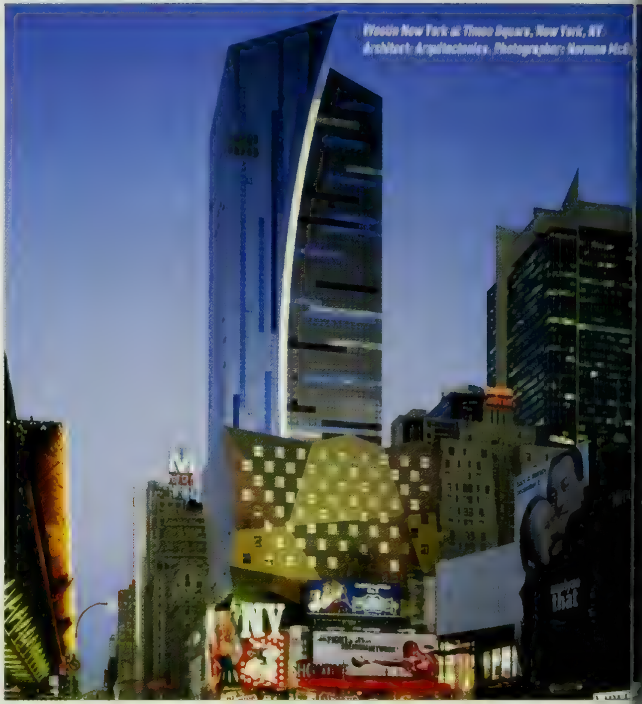
The three glass configurations have nearly the same overall glazing weight, but the combination of air space (A.S.) and interlayer results in an STL for the double laminated insulating configuration which is significantly higher than that for either standard insulating or monolithic glass.

Adding laminated glass to a glazing system is one of the best ways to optimize performance. The PVB interlayer effectively absorbs significantly higher levels of soundwaves than monolithic glass, thus creating a greater sound barrier. Adding a pane of laminated glass to an insulating glazing system gives the unit an even higher Sound Transmission Class (STC), blocking more soundwaves.

The key to creating an acoustically insulated indoor environment is to select products with a high STC, which is used by acoustical engineers as a measure of a building materials' resistance to the passage of sound. The higher the STC, the better the sound barrier.

Acoustic performance is especially critical in airports and surrounding structures, hotels, restaurants, and schools. At the San Francisco Airport International Terminal, designed by Skidmore, Owings and Merrill, LLP, laminated glass dampens noise of runway activity and overhead air traffic and provides seismic protection. On the other coast, the Westin New York hotel in Times Square, designed by Arquitectonica, uses insulating laminated glass with high-performance coatings to minimize outside noise from busy midtown Manhattan. The innovative design features a colored glass panel exterior that blocks sound and provides guests with a quiet indoor oasis in New York City.

Use of laminated glass for noise reduction provides building occupants with the highest level of environmental comfort. The glass blocks noise and lets in natural light. In addition to walls and windows, laminated glass can also be used in interior applications such as floors, shower and bath enclosures, partitions and room dividers, elevators, and doors.


Westin New York at Times Square, New York, NY
Architect: Arquitectonica, Photographer: Norman McG

In these applications, laminated glass helps eliminates the "cocktail effect" in in spaces, in which multiple voices, noise sources, and reverberations occur in an occ space. A room with high noise absorption will yield an environment that is conduc improved hearing and higher productivity.

Sustainability

The sustainability movement has become one of the world's leading architectural tr In the U.S., buildings account for 39 percent of total energy use and 68 percent of electricity use. Sustainable design supports efforts to conserve and restore n resources and reduce waste. The resulting benefits include enhanced occupant co and health, energy efficiency, and improved quality of life.

Laminated glass usage contributes to sustainability goals by maximizing natural ligh building while minimizing heat gain. The laminate interlayer provides a number of o when specifying laminated glass for daylighting. Various laminates, including colo textured interlayers, can let in appropriate amounts of light and diffuse the light throu interior spaces. Tinted glass substrates, coatings, and silkscreen patterns may al used. Ultimately, daylighting may reduce cooling costs, as natural light produces les than artificial light. Various studies, including one by the Rocky Mountain Institute noted that this may also improve occupant productivity and health, and create a pleasant environment.

Daylighting with laminated glass can also reduce energy costs associated with lightin cooling a building. A standard light bulb produces 85 percent heat and 15 percent li the U.S., 40 to 50 percent of total energy consumed by buildings is for electric light remove the heat it produces. Reducing the amount of artificial light reduces both elec costs and cooling costs associated with removing the heat from the electric lights. ■

CLICK FOR ADDITIONAL REQUIRED READING

ticle continues online at ***http://archrecord.construction.com/resources/conteduc/archives/0603solutia-1.asp***. To receive AIA/CES credit, you are required to read this additional text. The jestions below include information from this online reading. To receive a faxed or emailed copy of the material, call 877-674-1233 or email glazin@solutia.com.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

RNING OBJECTIVES

r reading this article, you should be able to:

iderstand how laminated glass addresses design and safety challenges
cognize the benefits of laminated glass during hurricanes and earthquakes
plain why laminated glass offers a high degree of security protection
scuss how laminated glass reduces sound transmission
ntify the sustainable, energy-efficient performance qualities of laminated glass

TRUCTIONS

r to the learning objectives above. Complete the questions below. to the self report form on page 239. Follow the reporting instructions, wer the test questions, and submit the form. Or use Continuing Education self report form on *Record's* web site—*irecord.construction.com*—to receive one AIA/CES Learning Unit uding one hour of health safety welfare credit.

ESTIONS

Upon impact by an object, laminated glass is likely to:
- **a.** Break into small, compact pieces
- **b.** Exit the framing system
- **c.** Crack, but adhere to the interlayer
- **d.** Discolor, due to exposure to the elements

Laminated glass has been tested and approved for use in safety glazing applications including:
- **a.** Shower and bath enclosures
- **b.** Overhead and sloped canopies
- **c.** Entrance, storm, and patio doors
- **d.** All of the above

Which of the following are true about glass performance following an explosion?
- **a.** Typically, 40 percent of injuries are caused by broken or flying monolithic (ordinary) glass.
- **b.** Monolithic glass can project at speeds of up to 300 feet per second.
- **c.** Framing systems do not impact the ability of laminated glass to resist explosions.
- **d.** The General Services Administration does not require the use of blast-resistant glazing system in high-risk government buildings.

Benefits of using laminated glass to protect against ballistic intrusion include:
- **a.** Complete visual clarity
- **b.** Reduces possible injuries due to ballistic attack
- **c.** Can provide secure, around-the-clock protection for employees of high-risk facilities
- **d.** All of the above

5. During a hurricane, the force of winds entering the building through windows broken by high winds or flying debris can have the following effects on the building structure:
- **a.** Allow for a dramatic increase in internal pressure inside the structure
- **b.** May allow the roof to be lifted off
- **c.** May exert pressure on the outside walls, causing structural failure
- **d.** All of the above

6. Laminated glass can be an effective safety measure during earthquakes because:
- **a.** It tends to stay in the frame following an earthquake, thereby protecting people from falling or flying glass.
- **b.** It consistently performs better than structural wall systems.
- **c.** It breaks into small shards of glass that are easy to remove after a quake.
- **d.** It flexes in concert with the racking movement of the earth.

7. To create an acoustically insulated interior environment, it is important to specify products with:
- **a.** A low Sound Transmission Class
- **b.** A negative Sound Transmission Class
- **c.** A high Sound Transmission Class
- **d.** A neutral Sound Transmission Class

8. Glazing units with at least one pane of laminated glass provide greater reductions in sound transmission than ordinary monolithic glass.
- **a.** True
- **b.** False

9. Adding a low-e coating to a laminated or insulating laminated unit can:
- **a.** Reduce energy consumption
- **b.** Increase energy consumption savings
- **c.** Pay for itself within a number of years
- **d.** All of the above

10. Laminated glass can contribute to credits in the following LEED system categories:
- **a.** Local and Regional Materials
- **b.** Indoor Environmental Quality
- **c.** Energy and Atmosphere
- **d.** All of the above

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ABOUT SOLUTIA INC. AND VIRACON

Solutia Inc. is a world leader in performance films, producing Saflex®, Vanceva® and KeepSafe® brand polyvinyl butyral interlayers (PVB) for laminated glass in automotive and commercial and residential architectural applications.

Viracon is an international company of Apogee Enterprises, Inc. Viracon produces high-performance glass products, including tempered, laminated, insulating, and silk-screened glass, and high-performance coatings. Apogee Enterprises, Inc., is a leading fabricator, distributor, and installer of value-added glass products and systems.

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MINIMAL LIGHT GAP BETWEEN FABRIC
ELECTRONIC CONTROL OF SHADE POSITION FROM TIMECLOCK AND WALL CONTROL
HEMBARS ALIGN PRECISELY ACROSS LENGTH OF ROOM
SHADES
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The Essential esign Element for Any Office Space

ded by Lutron

oduction

'e are 86 billion square feet of commercial office space in the United States. The siness of these offices is vast in scope: law, advertising, government, finance, and facturing. The legacy of these offices ranges from the most established banking firms iding e-Commerce companies. Despite these wide variations in business scope and izational structure, the purpose of every square foot of commercial office space is the —facilitating communication and serving as a place where work can be accomplished 'ganizational needs met.

the purpose of an office space may be clearly defined, office space design remains, cessity, much more fluid. Businesses trying to succeed are forced to constantly e and adapt in the fast-paced and dynamic arena of corporate competition. The design office space must transition, in order for the space to remain relevant and functional w organizational needs.

isition of Office Space Design

1960s, the number of available office jobs was growing rapidly as the American my shifted from agrarian, to industrial, to office buildings and knowledge workers. office spaces were carbon copies of the offices across the hall or down the street. ising agencies were indeterminable in appearance from legal offices. The design ate of the time was bland and neutral. Office spaces were mostly private, their sizes d by seniority and clout with cookie cutter precision. The office design reinforced the 'ormality of the business world. Walls and doors prevailed. Communication was i out in memos. Employee interaction occurred in planned meetings with agendas. riters and telephones were hot technologies whose weight and wires kept employees ed to their desks. Corporate cultures were functional, framed by the 9-5 workday, and ely loyal. People typically remained with the same company until retirement.

NTINUING EDUCATION

Use the learning objectives below to focus your study as you read **The Essential Design Element for Any Office Space.** earn one AIA/CES Learning Unit, including one hour of health :ty welfare credit, answer the questions on page 183, then follow the orting instructions on page 238 or go to the Continuing Education tion on *archrecord.construction.com* and follow the reporting :ructions.

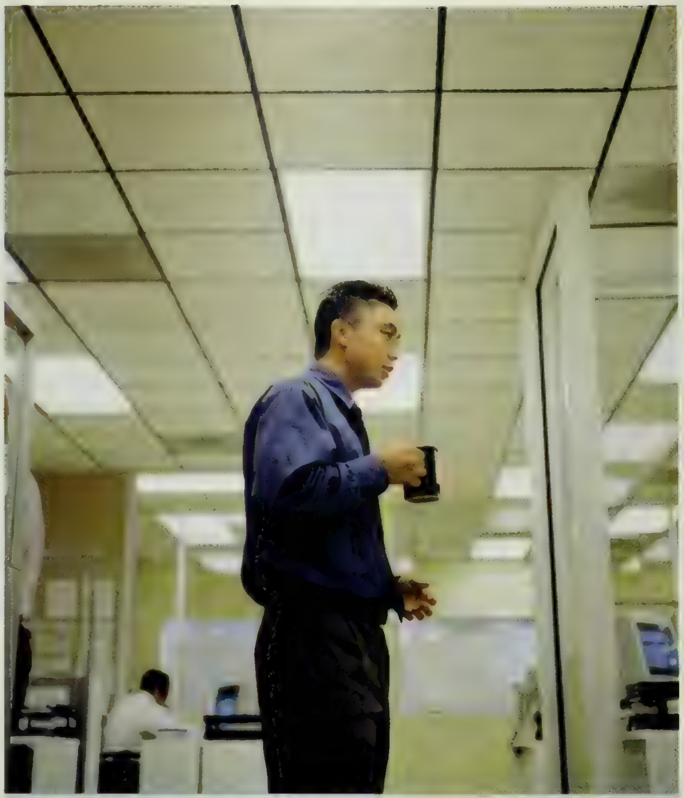
ARNING OBJECTIVES

:r reading this article, you should be able to:

xamine how office design has transitioned to accommodate changing rganizational needs.

ıcorporate lighting control strategies that improve building efficiency and dd value to the office space.

pecify lighting controls that are easy to install, maintain, and reconfigure 'hen floor plans change.



Office design today aims to create spaces that are flexible and efficient, and work environments that are comfortable and productive.

Office space design in the 21st century must accommodate a very different corporate landscape. Information technologies like mobile phones, laptop computers, and the Internet have created an atmosphere where a person's office is really wherever that person happens to be, anywhere in the world, and at any time, frequently available 24/7. Traveling to the office is no longer required to get work done.

The office building has become a flagship communicative hub reinforcing corporate culture, collaboration, and development. Office space design increasingly incorporates elements of branding and corporate identity into a structure with colors, credos, and furnishings. Open office spaces, atria, and cafeterias encourage informal communication between teammates that is invaluable for keeping people informed and generating ideas. Communication frequently occurs face-to-face or over cyberspace. AV presentations, intercontinental teleconference calls, e-mails, and text messages are important mediums that the office space must be able to accommodate. Office buildings provide a medium to communicate corporate identity and brand. Office design builds bridges between employees, facilitating communication, information transfer, and interpersonal collaboration.

The popularity of rigid private-office-heavy floor plans has waned in favor of highly adaptable, partitioned spaces with modular office furniture systems. This new design allows spaces to be quickly and easily reorganized to match changes in corporate strategies and initiatives. Individual cubicles merge to create a collaborative team environment. Longer tables and whiteboards are partitioned off to quickly create project rooms or other needed conference areas. The International Facilities Management Association (IFMA) quoted the current inter-corporate churn rate at 41%, which means that almost half of the employees in an office space are physically moved to a different location within the same company every year.

Ensure that the office space will be able to accommodate changing organizational needs and floor plans by including a reconfigurable lighting control system in the design. Reconfigurable lighting control systems easily support a space that may be a conference room today and a team environment tomorrow.

Perhaps the most fundamental difference between the organizational needs of 1960 and today is the fierce competition to hire and retain quality employees. Talent is viewed as the most scarce and valuable resource that a company can obtain. Subsequently, employees' salaries and benefits are by far the largest expense that an office building incurs. Office spaces are tasked to provide productive and interactive work environments, and to serve as tools for employee comfort, satisfaction, and retention. It is essential that the design of the office space support these efforts, simultaneously communicating to employees that they are important and valued by the firm.

Amidst the tumult of intense competition, quick strike and counterstrike initiatives, continuous reorganization, and a team roster that is constantly in flux, concrete and glass provide the semblance of stability, purpose, and success. The employees and floor plans will change, that is the nature of business. The office building will stand, that is the nature of architecture.

Benefit from the Building

Keeping an office building capable of supporting organizational needs is an essential element of good business, underscored by the fact that, for many companies, the physical building is the most expensive capital asset on the balance sheet. In fact, the significant investment required to construct, operate, maintain, and repair an office building (an investment that often represents between 10-20% of a company's annual revenue) creates a strong demand from building owners and shareholders to pinch every last benefit out of the built environment. "Failure to wring every benefit out of the most expensive capital asset most companies have would not be countenanced in any other aspect of corporate life" (Seiler, John A. 1984. Architecture at Work. "Harvard Business Review," September/October, 120).

Reducing the amount of money required to operate the building can significantly affect the bottom line and is often easily accomplished by improving the efficiency of various building systems, like lighting, heating, or cooling. But opportunities to squeeze the maximum benefit from a building asset exist beyond improving its operational efficiencies. Buildings can be designed to create value for the company, one square foot at a time.

Efficiency vs. Value

Efficiency is highly quantitative. It describes the cost of producing something—in energy, time, money—in a manner that gets more of something for less. To create system efficiencies, the current performance of the lighting system or HVAC system must be examined and improved. Achieving better system efficiency will reduce operational expenses, but a more efficient building is not necessarily a better place to work. The impact of system efficiency on the office environment depends upon the methods employed to achieve it.

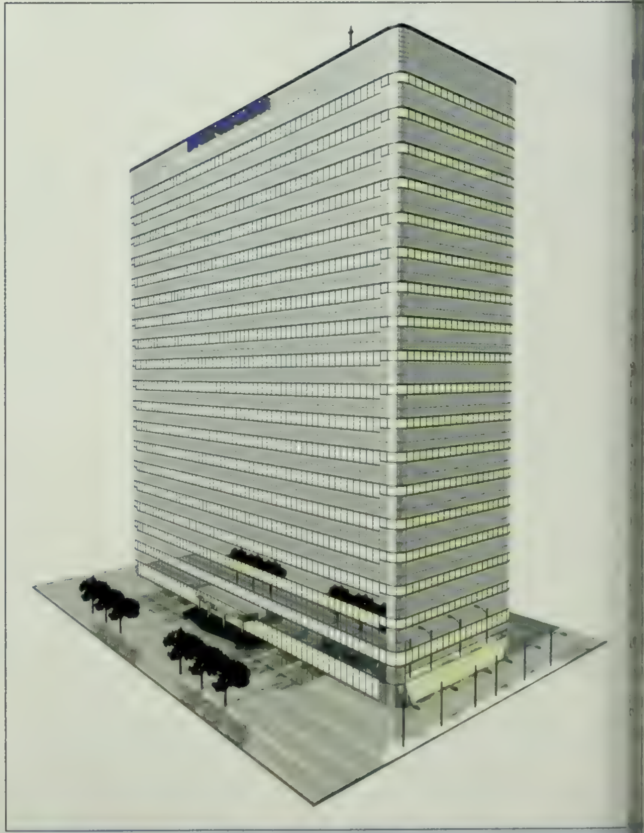
Value is a relative term that provides a comparison for buildings and the ways the
designed. The value of an office building to an organization can describe the cost/s
foot, productive capacity, sustainability, and its overall ability to facilitate communic
and meet organizational needs. An office space's value is defined by whether it creat
enjoyable, productive work environment, while sending the right corporate messa
clients and employees.

Multiple methods for achieving greater system efficiencies have been employed ov
years. While each of the following was successful in reducing operational expenses
value of the space was damaged as a direct result of its more efficient design.

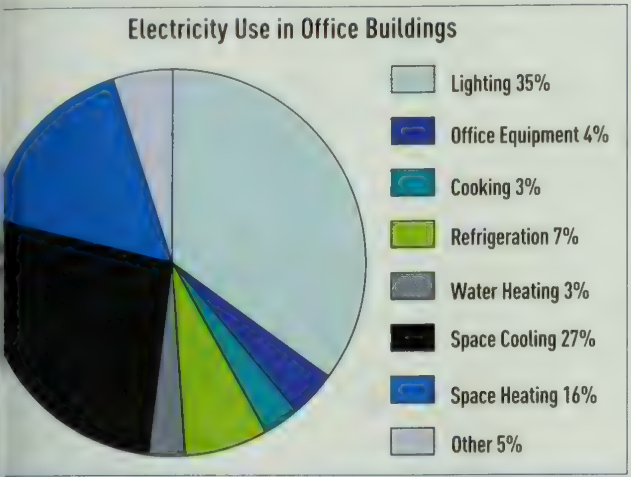
HVAC Efficiency

Originally, windows provided the climate control in buildings. With the introduction of
systems, fewer windows were designed into commercial projects, reducing the poten
leaks and thermal transmittance. This self-contained environment allowed buildin
heat and cool themselves more efficiently, without being forced to accommodat
influence of outdoor elements. Improved HVAC efficiency was achieved, but it cos
commercial space the presence of daylight and outdoor views.

In office buildings, the presence of daylight and views has been linked to imp
employee mood, motivation, satisfaction, health, and productivity. In European comm
buildings, the access to daylight and the connection to the outdoors is a fundam
design element that has been manifested in the construction doctrine "no employee
area can exist more than 6 meters away from a window." In the United States
incorporation of daylight and views is recognized by the LEED™ (Leadership in Energ



Lighting control equips buildings to operate more efficiently and adds value
to the floor space by making it a healthier and more productive place to wor



In a typical office building, lighting consumes more electricity than heating or cooling systems.

nmental Design) rating system as an element of sustainable design, enhancing the nability of the space by making it a more productive and healthy environment for ng occupants.

ice space with few windows may have a lower heating bill, but it may also have higher teeism and turnover ratios, less healthy employees who are less excited to come to every day and are less productive when they get there. This space is efficient, but its to the organization and its ability to support organizational needs is low.

ce Efficiency

s another big expense for office buildings. Space equals money, as buildings are d dollars for every square foot. The pursuit of space efficiency aims to improve how building is using the space it is paying for to create revenue for the company. Studies es organizations, accounting firms, consulting firms and others concluded that in office environments an employee's desk may be unoccupied 60% of the year.

scovery of the empty, yet expensive, workspaces drove the development of the zational concepts: hot-desking and desk pooling. The term hot-desking is borrowed he Naval term "hot-bunking," which is a practice on submarines where one cot is y multiple sailors—one after the other. Hot-desking is a strategy that aims to rotate yees in and out of community desks so efficiently that the chair is reoccupied before time to cool down. Desk pooling provides employees who are normally elsewhere with p of standard and unpersonalized desks to use during those rare visits to the office. sk is equipped with all usual accouterments: stapler, phone, power for laptop and an t link. But it is devoid of personalized touches and an everyday owner.

action to the loss of a personal office space was negative across the board. yees, even those who do not spend much time at their desk, associate their ations with feelings of importance, security, and ownership. In the 21st century, spaces have become more important than functional spaces; they provide a sense of y and represent, in square feet and ergonomic furniture, an investment in the ual by the company.

sking and desk pooling increased the space efficiency of the building. They also lly upset the company's most valuable asset (its employees), reduced productivity, mmunicated to the workforce that their contributions were minimal and their ance marginal.

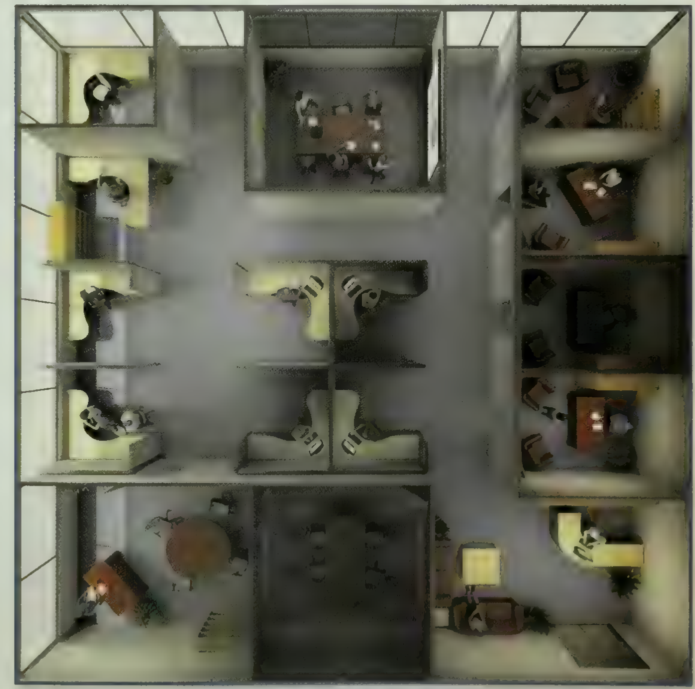
Achieve Efficiency and Add Value with Lighting Control

Improving system efficiencies can negatively affect the value of a space, but efficiency and value are not mutually exclusive. Opportunities exist to create system efficiency, and at the same time, make an office space more flexible, productive, healthy, and valuable to an organization.

One such opportunity exists in the design of the building's lighting system—or, more specifically, the design of the building's lighting control system. The lighting control system specified in a building determines how occupants are able to use the lights in the space. In the most minimal capacity, light control allows lights to be switched on/off either independently or in larger groups. Dimming technologies allow light fixtures to provide a range of light output—often ranging from 1 or 10% to the full 100%. Lights can be controlled manually with a handheld remote or from wall stations, or programmed to automatically turn on and off at certain times or when rooms are empty. Light control can even be preset to recall specific light levels—much like the presets programmed into a car radio—based on the activities in the space. Light controls enable a building to save energy and allow employees to select a comfortable light level that is best suited to their tasks.

Lighting systems represent a significant operational expense. Today, more electricity is used to light a typical building than is used to heat, cool, secure, or otherwise operate the structure. It is estimated that roughly 10% of all of the electricity consumed in the United States is used to light commercial buildings and, in 2005, that electricity cost Corporate America over $7 billion.

Rising energy costs have spurred a re-examination of how commercial spaces are using their kilowatt-hours. Systems designed to provide more light than necessary, minimal light control, and few light level options have been identified as three reasons why the lighting bills are unnecessarily high.



Design office spaces to be able to provide unique lighting levels to match individual preferences and tasks.

While the presence of light is essential for an office space to be functional, lighting systems are often designed to provide more light than necessary for typical office tasks. The Illuminating Engineering Society of North America (IESNA) recommends that the office building should be equipped to provide between 30-50 footcandles on a workspace. Fluorescent lamps are highly efficient and currently the industry standard in commercial construction. However, as fluorescent lamps age, their light output diminishes. Lamp output is also reduced when the lamps become dusty and dirty. To ensure that there is always enough light present in the office space, many lighting systems are designed to compensate for the diminished output and, subsequently, regularly provide more light than is needed.

Lighting control can be a design tool that promotes space flexibility and energy savings. Incorporating only the most basic or minimal light control on a project locks the building's lighting resource into a rigid and uncompromising structure that wastes energy as unused lights are kept on. For example, in private offices light switches are often placed conveniently near the door. This switch location makes it easier for employees to turn the lights off before they leave their office space, saving energy and money. In the shift from private office spaces to open office spaces, switches now control large groups of lights located over desks that may be vacant for a significant portion of the day. A lighting control system that ties 20 light fixtures to one light switch unnecessarily wastes energy by keeping all of the lights on, even if only half of the people are in their seats.

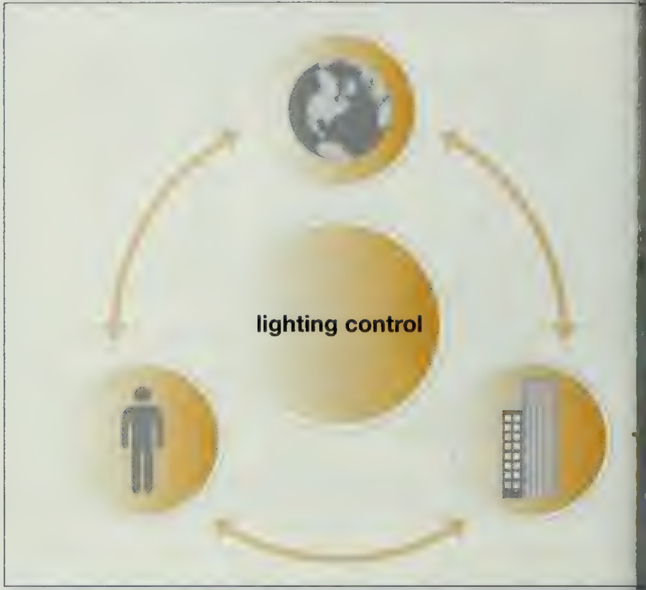
Beyond the operational expense of keeping overhead lights on when the desk is empty and providing more light than necessary on the workspace, providing no available light range between 100% and off can unnecessarily tax the human element of the office. Too much light exposure has adverse affects on people's health, mood, and performance. The squinting and strange postures employees strike to avoid glare and unnecessarily bright conditions cause headaches, fatigue, and muscle aches.

Although the reactions to the wrong light level may be fairly routine, the light levels considered right and wrong differ from person to person. Health conditions, preferences, age, and task are factors that combine to create the unique visual environments ideal for each individual employee. Providing inappropriate lighting levels in the workplace have been linked with productivity losses, reduced attention spans, and dissatisfaction. Lighting systems in office spaces can be easily designed to match employee preferences by incorporating dimming technologies in the overhead lights. This improved controllability has been credited with improving individual employee productivity 4-7%, reducing eyestrain, and improving worker satisfaction.

Incorporating more lighting control and offering a wider range of light levels throughout the office space saves energy, improving the efficiency of the lighting system, and adds value to the space by making it a more comfortable and productive place to work. Designing lighting control into an organizational space simultaneously supports environmental interests and sustainable design guidelines, equips the building to work smarter and be more profitable, and accommodates the company's most valuable asset.

Lighting Control Strategies

The key to achieving the best fit between an office building and its lighting control system is to first determine how the space should function and how it will be used, then identify which lighting control strategy delivers the functionality that supports the intent of the space. Each different lighting control strategy offers a unique blend of energy savings potential and controllability. Five strategies popularly employed in office buildings are: tuning, occupancy sensing, daylight harvesting, personal control, and preset control.



Lighting control strategies need to support sustainable design, improve building efficiency, and accommodate the individual.

Tuning is a strategy that uniformly lowers the high-end light level available throughout a space or building. Instead of switching fluorescent lights between 100% on and off, tuning lowers the high-end light level to 90%, for example, so lights switch between 90% an
This strategy provides energy savings to the building every time the lights are turne
automatically reducing the amount of electricity used for lighting by 10%. Tuning is
employed in corridors, hallways, stairwells and other areas of the floor plate where l
are constantly on, but occupants do not require a high level of personalized control fo
or comfort.

Occupancy sensing is a lighting control strategy that equips a building to turn ligh
when rooms are empty. Occupancy sensing can create an average energy savings of bet
25-40% and is typically employed in private offices and ancillary areas like copy r
kitchenettes, and bathrooms, where occupancy is sporadic.

Daylight harvesting balances the electric light and natural light in a space, automat
lowering electric light levels when daylight is present and increasing electric light lev
a space as daylight wanes. Daylight harvesting saves energy by using electric light
complement to available daylight and protects the visual ergonomics of the spa
ensuring that the appropriate amount of light is always present at the desktop. Da
harvesting has been credited with reducing lighting energy consumption by almost 40
can be incorporated into any office area that receives daylight exposure.

Personal control allows employees to select their own overhead light level and modi
light level throughout the day. Personal control gives employees the option to turn
overhead lights on, off, or to select a light level in between. This light control strateg
been credited with lighting energy savings of over 60% and is often applied in open
areas, private offices, and team environments.

Preset control provides a space with different pre-selected lighting scenarios. For exa
a conference room wall station may be marked AV presentation, Meeting, Cleaning, an
Each of these scenarios is tied to a different light setting in the room. The AV presen
button lowers the light levels to accommodate the AV technology and makes it easi
people to see the screen. The meeting button engages overhead lights at a level that
but less intense than 100%, perhaps 75%. Cleaning provides 100% light so that sta
see dust and dirt. This lighting control strategy is most beneficial in areas that host
different employees for numerous types of tasks. Preset control makes it easier f
space to best fit the needs of the group, without being prohibitively difficult to use.

iorating the appropriate lighting control strategy in commercial buildings improves n efficiency and adds value to the space, but lighting control systems are able to r support office space design. Lighting control systems are available that provide ı, occupancy sensing, daylight harvesting, personal control and preset control in a package that is easy to reconfigure, easy to maintain, easy to understand and use. These features ensure that a system that was once the best fit for the office design will continue to fit organizational needs, even as those needs change. ■

CLICK FOR ADDITIONAL REQUIRED READING

ticle continues online at ***http://archrecord.construction.com/resources/conteduc/archives/0603lutron-1.asp.*** To receive AIA/CES credit, you are required to read this additional text. The quiz ions below include information from this online reading. To receive a faxed or emailed copy of the material, call Jeanette Fitzgerald at Lutron, (610) 282-6661 or fax (610) 282-6437.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

ARNING OBJECTIVES

er reading this article, you should be able to:

xamine how office design has transitioned to accommodate changing rganizational needs.

ıcorporate lighting control strategies that improve building efficiency and add alue to the office space.

pecify lighting controls that are easy to install, maintain, and reconfigure hen floor plans change.

ıTRUCTIONS

er to the learning objectives above. Complete the questions below. to the self report form on page 238. Follow the reporting instructions, wer the test questions, and submit the form. Or use Continuing Education self report form on *Record's* web site—*hrecord.construction.com*—to receive one AIA/CES Learning Unit luding one hour of health safety welfare credit.

ESTIONS

Today, office spaces are designed to:
- **a.** facilitate communication between employees.
- **b.** quickly and easily reorganize.
- **c.** provide productive work environments.
- **d.** all of the above

In 2005, how much did it cost to light commercial buildings in the United States?
- **a.** $700,000
- **b.** $7 billion
- **c.** $700 million
- **d.** $7 million

Which of the following is the reason why so much money is spent on necessary lighting?
- **a.** lighting systems are often designed to provide more light than necessary
- **b.** minimal light control causes lights to be left on when unneeded
- **c.** few light level options provides lighting at only 100% on, which may be too bright, or off
- **d.** all of the above

Improving the efficiency of an office building always makes it a better place to work.
- **a.** true
- **b.** false

5. Designing appropriate lighting controls into an office space:
- **a.** wastes energy.
- **b.** improves productivity and comfort.
- **c.** eliminates the possibility of changing the floor plan.
- **d.** creates glare and overly bright conditions.

6. Personal control is the lighting control strategy that:
- **a.** detects when a person enters the room.
- **b.** allows employees to program the lights to turn on at a certain time and off at a certain time.
- **c.** allows individuals to select their own overhead light level and change it throughout the day.
- **d.** none of the above

7. Daylight harvesting is the lighting control strategy that:
- **a.** balances electric light and natural light, automatically lowering electric light levels when daylight is present and increasing the electric light level as daylight wanes.
- **b.** uses only daylight to illuminate a space.
- **c.** describes any space where daylight is present.
- **d.** none of the above

8. Which of the following characteristics of a lighting system ensure that it will be able to adapt to changing organizational needs?
- **a.** inexpensive and flimsy
- **b.** energy efficient and able to accommodate personal preferences
- **c.** provides minimal light control and offers few light level options
- **d.** easy to reconfigure, easy to maintain, easy to understand and use

9. Which of the following is NOT needed to design a fluorescent lighting control system capable of occupancy sensing, daylight harvesting, personal control, and preset control?
- **a.** fluorescent dimming ballast
- **b.** daylight sensor
- **c.** interfaces and power packs
- **d.** occupancy sensor

10. Which of the following features, if specified, makes it possible to reconfigure a lighting system without rewiring?
- **a.** digital addressable ballasts
- **b.** sensors that can be grouped to different fixtures
- **c.** wireless handheld programmer
- **d.** all of the above

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Interiors

Big effects in small spaces: architects transform urban interiors with color and humble materials

BRIEFS

The Furniture of Carlo Mollino, a new monograph by Fulvio and Napoleone Ferrari, surveys the audacious work of the 20th-century Italian architect who blazed a trail over four decades, beginning in the 1930s, designing furniture with shapes **inspired by tree branches, animal horns, and the human form.** Most of Mollino's pieces were site-specific, one-off commissions, which is rare in today's marketplace. Last year, a Christie's sale of a 1949 Mollino table set a new record for a piece of 20th-century furniture. Go to www.phaidon.com. **Strategies for specifying color** are the focus of *Interior Color by Design Volume 2,* by architectural designer Jonathan Poore (Rockport Publishers, 2005). The book illustrates effective color selection mixing more than 250 samples hues. Go to www.rockpub.com.

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Lewis.Tsurumaki.Lewis
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You may have found yourself there before. The assignment is to design a compact commercial interior on a tight budget within an even tighter build-out schedule. Renovate a nondescript space, mask footprint problems, and solve mechanical constraints. Wedge required program elements into a leased facility, but elicit an architectural big bang that will help to spark new business.

The three architects who designed the interiors we survey this month met all of the challenges cataloged above with, well, flying colors. Whether the urban space employs intersecting painted planes, panels of translucent film, or bright acrylic strips sandwiched to catch light, each uses color in unexpected ways. These examples of divergent building types—a rehabilitation studio, an office, and a restaurant—welcome clients into small-scale architectural interiors that engage the eye and spur movement inward.

For the Flex physical rehabilitation and fitness center in Oakland, California, Pierluigi Serraino turned the unwieldy program requirement of an aquatic therapy zone into a strong visual anchor. Setting the above-ground pool at center stage in its own room bordered by dressing areas, he gave the process of water therapy an iconic presence. Walls painted in vibrant hues add visual depth to the rectilinear space.

Miloby Ideasystem designed a new headquarters in Miami for Lucini Italia, a gourmet food importer, orchestrating a stripped-down landscape that prizes openness. Wedding green, translucent panels and exposed mechanical structures, the office's kit-of-parts Minimalism plays a supporting role to dramatic views of the city.

In New York, Lewis.Tsurumaki.Lewis overhauled a deli to create Xing, a Pan-Asian restaurant (above). Showcasing tactile materials and practically percolating with color and diffuse light, the handsome eatery makes a strong case that thinking outside the *small* box can overcome a litany of project constraints. *William Weathersby, Jr.*

Pierluigi Serraino weds geometry and color to enliven the **Flex** physical therapy center in California

By William Weathersby, Jr.

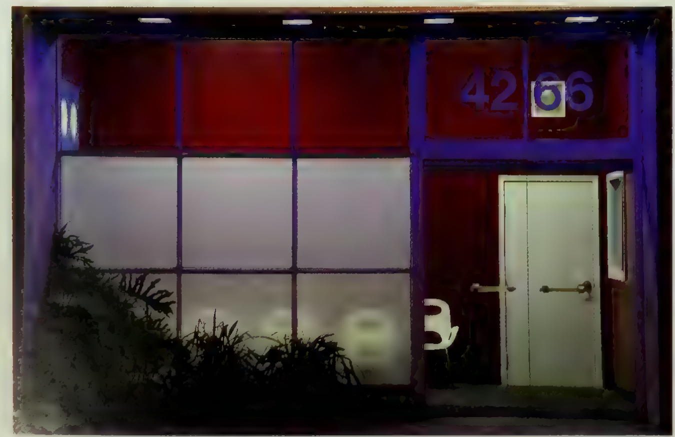
Anyone who has ever labored to recover after a physical injury knows that the rehabilitation process can be arduous but the end results often invigorating and life-affirming. For Flex, a physical therapy and fitness studio in Oakland, California, architect Pierluigi Serraino has enhanced the functional grace of a 3,200-square-foot space with a vibrant visual aesthetic. Planar geometry and the juxtaposition of bright colors envelop the compact facility in a soothing ambience that aims to help clients push ahead toward their goals.

"In her book *Illness as Metaphor*, Susan Sontag remarks that a language of war and battle often rules when professionals and clients deal with debilitating health and physical conditions," Serraino says. "Challenging this notion, the main goal of Flex is to insert joy in the path toward recovery from ailment."

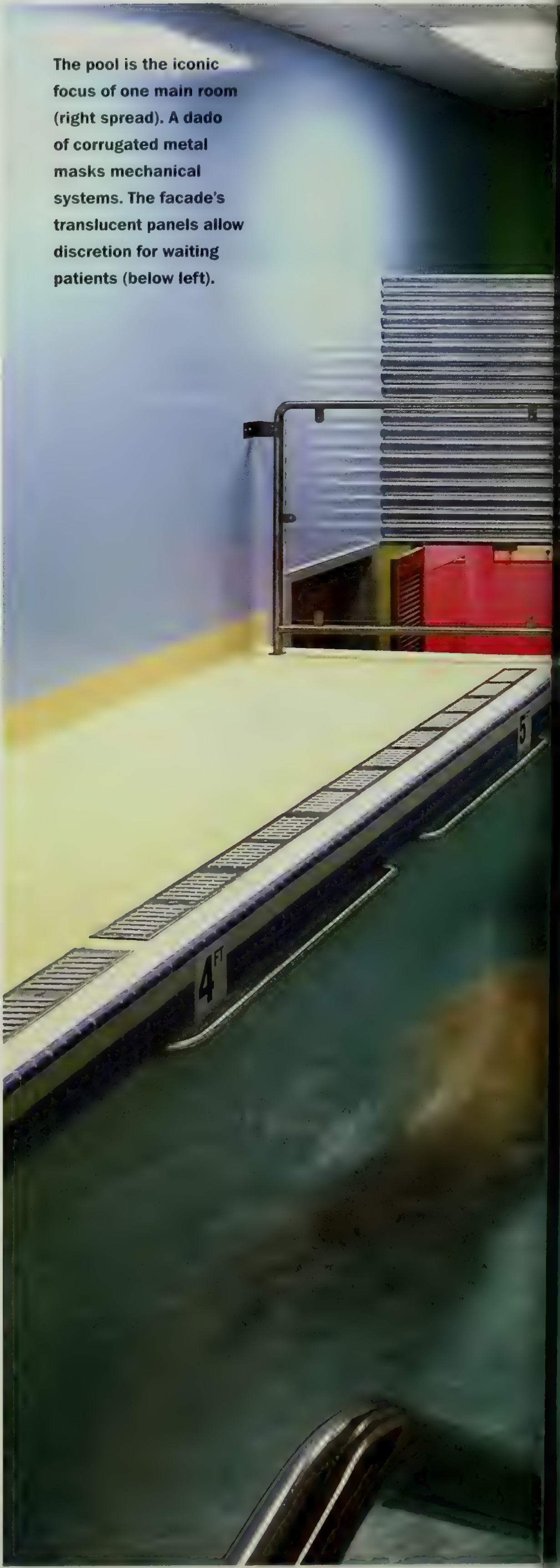
Serraino, who is a project designer with the architecture firm Anshen + Allen in San Francisco, took on this project as a solo assignment. The client was his wife, physical therapist Pamela Wain, who was expanding her practice with her own studio. Though he had never designed a physical therapy space before, the architect says the project's program, and particularly its mechanical requirements, intrigued him. "With a limited footprint and budget, I wanted to create a Modernist

Project: *Flex Physical Therapy and Fitness, Oakland, California*
Client: *Pamela Wain*
Architect: *Pierluigi Serraino, Assoc. AIA*

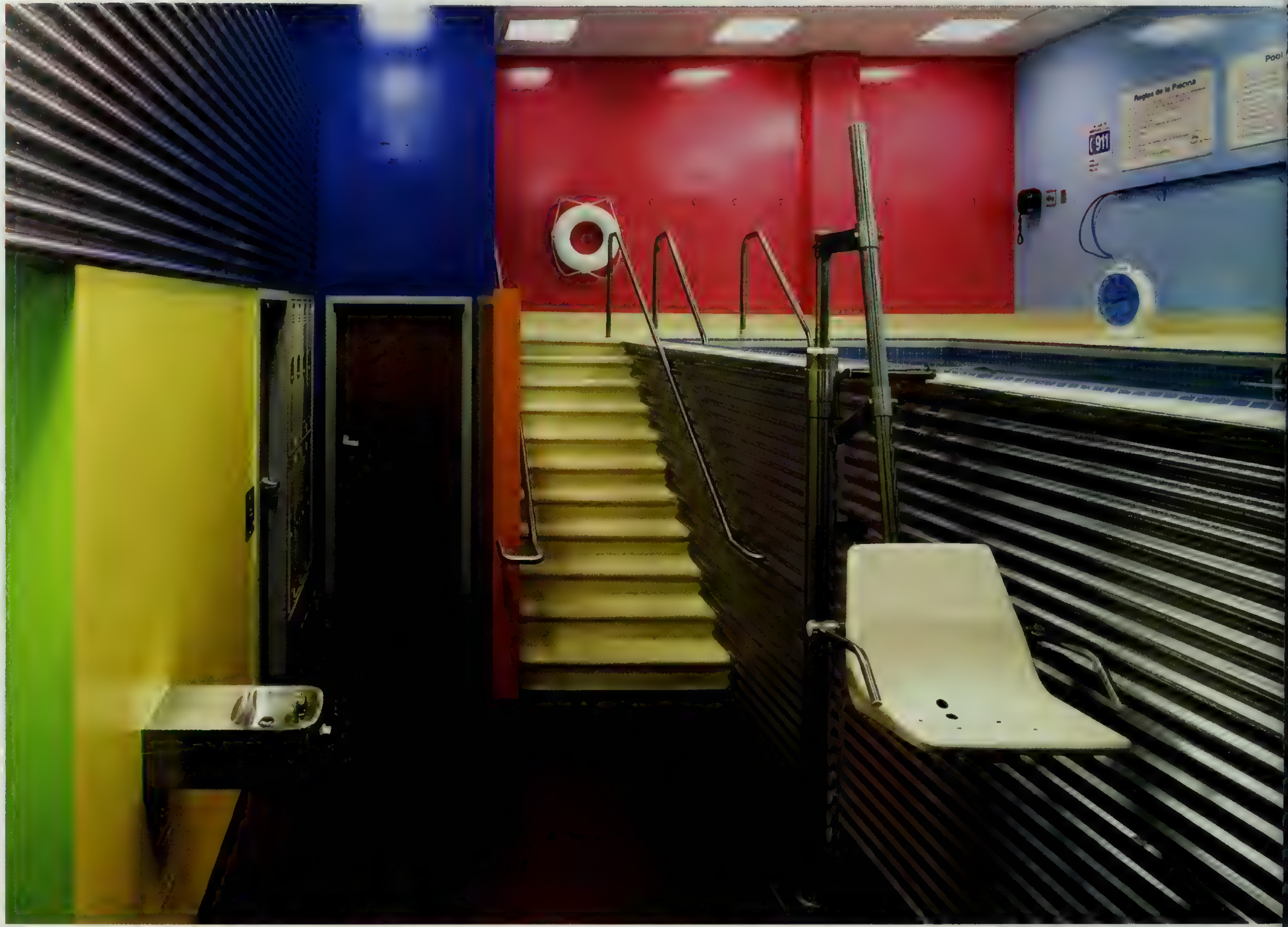
Consultants: *Gregory Paul Wallace (structural); Haddon Engineering (HVAC); Callahan Engineering (plumbing)*
General contractor: *Eric F. Anderson*



PHOTOGRAPHY: © DAVID WAKELY



The pool is the iconic focus of one main room (right spread). A dado of corrugated metal masks mechanical systems. The facade's translucent panels allow discretion for waiting patients (below left).



The custom pool is wrapped in a seamless sheet of corrugated metal (above). Each wall plane is a different color to create visual depth. The red-walled waiting room/reception area provides a bright welcome (below).

landscape that went beyond a series of enclosed spaces," Serraino sa
"The forms and materials create visual relationships, and clearly rev
how the space is constructed."

Gutting a rental storefront space that had most recently house
flower shop, the architect plotted a straightforward sequence of spa
with clear sight lines to establish a sense of procession. Entering throug
metal-framed storefront whose glass panels are treated with transluc
film for privacy, clients arrive at a double-height reception room pain
bright red. A blue-and-white wall graphic accompanies curvaceous ch
designed by Karim Rashid that add a Pop Art feeling.

Beyond the reception area, an exercise room reserved for fl
and massage-table workouts has walls awash in red and yellow. Called
"land therapy" area, the zone is filled with wood-based equipment
tions that support Pilates instruction. "They are such beautiful piece
equipment, mechanically and aesthetically, that I wanted to show
them," Serraino says. In lieu of partitions to separate massage and exer
stations, 14-foot-tall curtains create a vertical scale and aid temporary
vacy. The curtains, he notes, visually simulate the look of a colonn

An above-ground therapy pool commands the second m
room, a 1,000-square-foot space. Measuring 8 feet by 20 feet, the cust
pool sits atop three steel beams set at grade within the concrete floor
The resin pool shell is supported by a wood-frame structure and rise
a height of 5 feet 2 inches within the 16-foot-tall room. Leaving the p
above ground was required because the facility is a leased space,
Serraino says he welcomed the chance to create two elevations in

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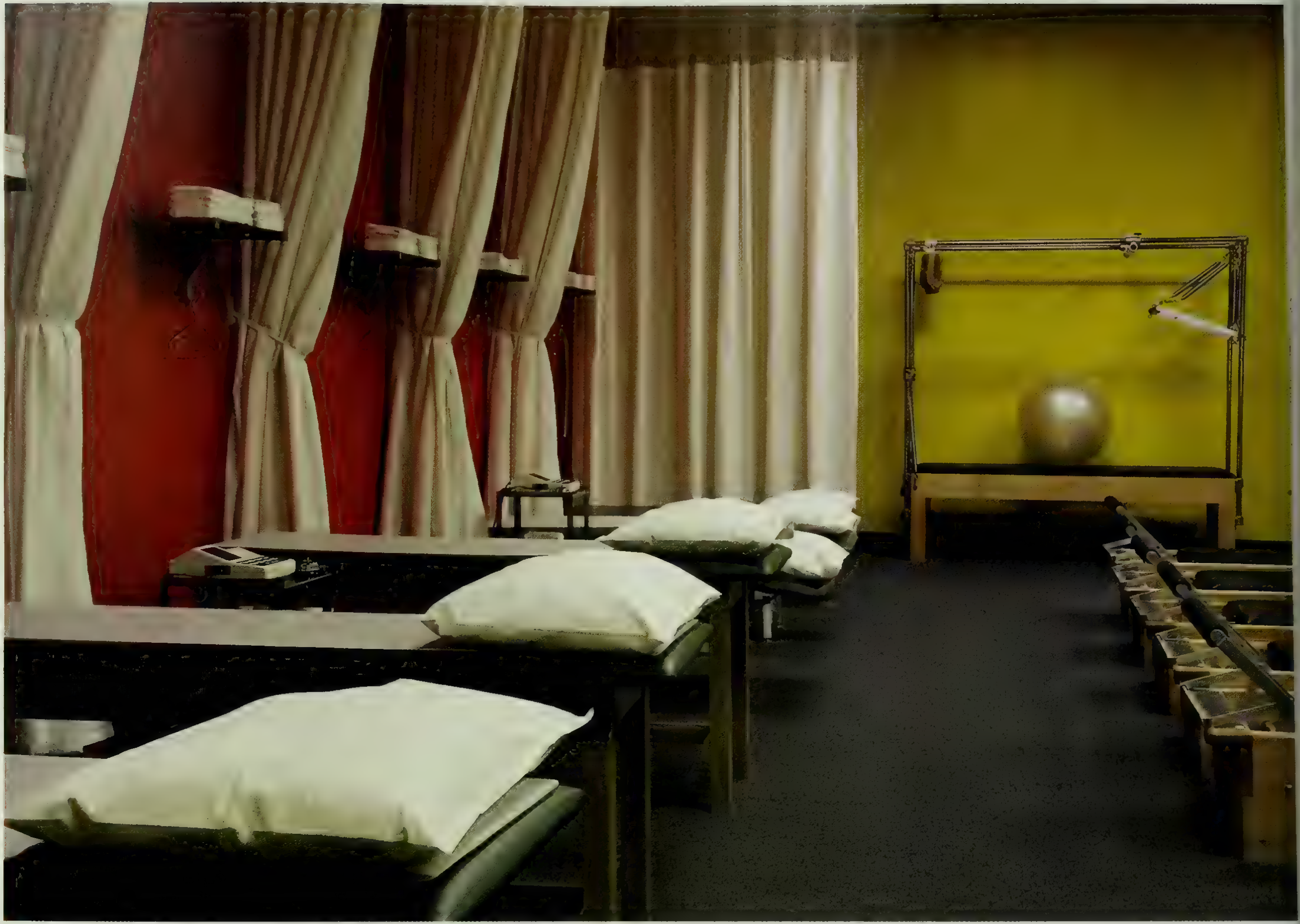

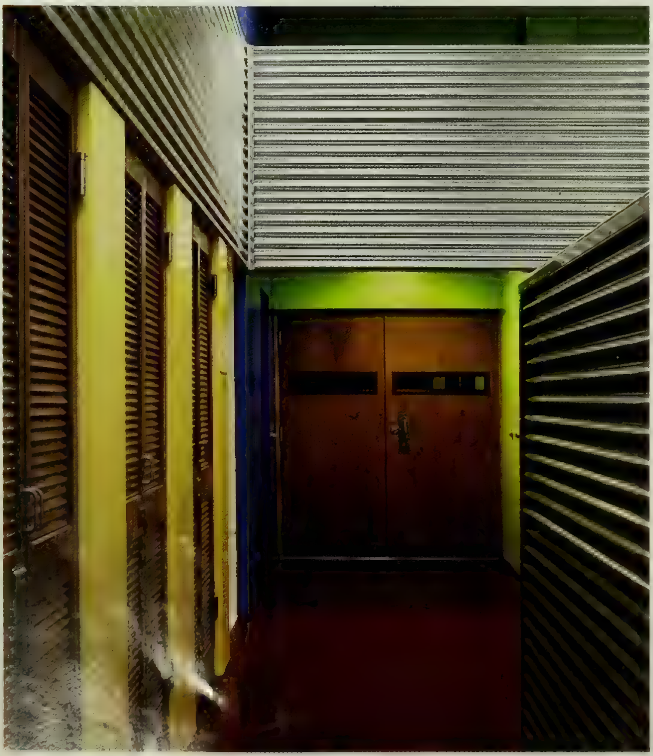

Fourteen-foot-long curtains in the massage and Pilates areas stand in for built partitions (above). Easy-to-maintain finishes in the dressing room area include an epoxy-resin floor, metal panels, and louvered doors (left).

room. Along its two exposed sides, the pool is faced with seamless sheets of corrugated metal. Across the room, two opposing walls feature a dado of the same metal, creating a visual dialogue with the pool enclosure. The panels also screen the studio's HVAC and plumbing systems, which represented a significant part of the build-out budget. Serraino placed the pool lift in a prominent location to emphasize its sculptural quality.

Each wall within the aquatic room—along with its epoxy-resin floor and pool deck—is a different, vibrant color. Along one wall, the interiors of four changing rooms fitted with louvered doors are also painted in varying hues to provide visual cues. While color at Flex is the visual vehicle defining intersecting planes, it also casts economical theatrical backdrops where the mending of body and spirit is celebrated. ■

Sources
Wood doors: *Lemieux*
Hardware: *Schlage; Builders Brass*
Acoustical ceiling: *USG*
Metal panels: *AB Steel Structures*
Resilient flooring: *Mount Diablo Flooring System*
Paint: *Sherwin Williams*
Chairs: *Umbra*
Pool lift: *Aquatic Access*

For more information on this project, go to Interiors at **www.archrecord.com.**

rners of his mouth peak slowly, revealing a mischievous secret. He slides gracefully
ne room to the next, entertaining, teasing, stirring the wind with every step. Back and
the game is played for our amusement. And then he leaps; transcending the plane of
t is expected. The contest of intellect is won, emotion prevails soundly over reason.

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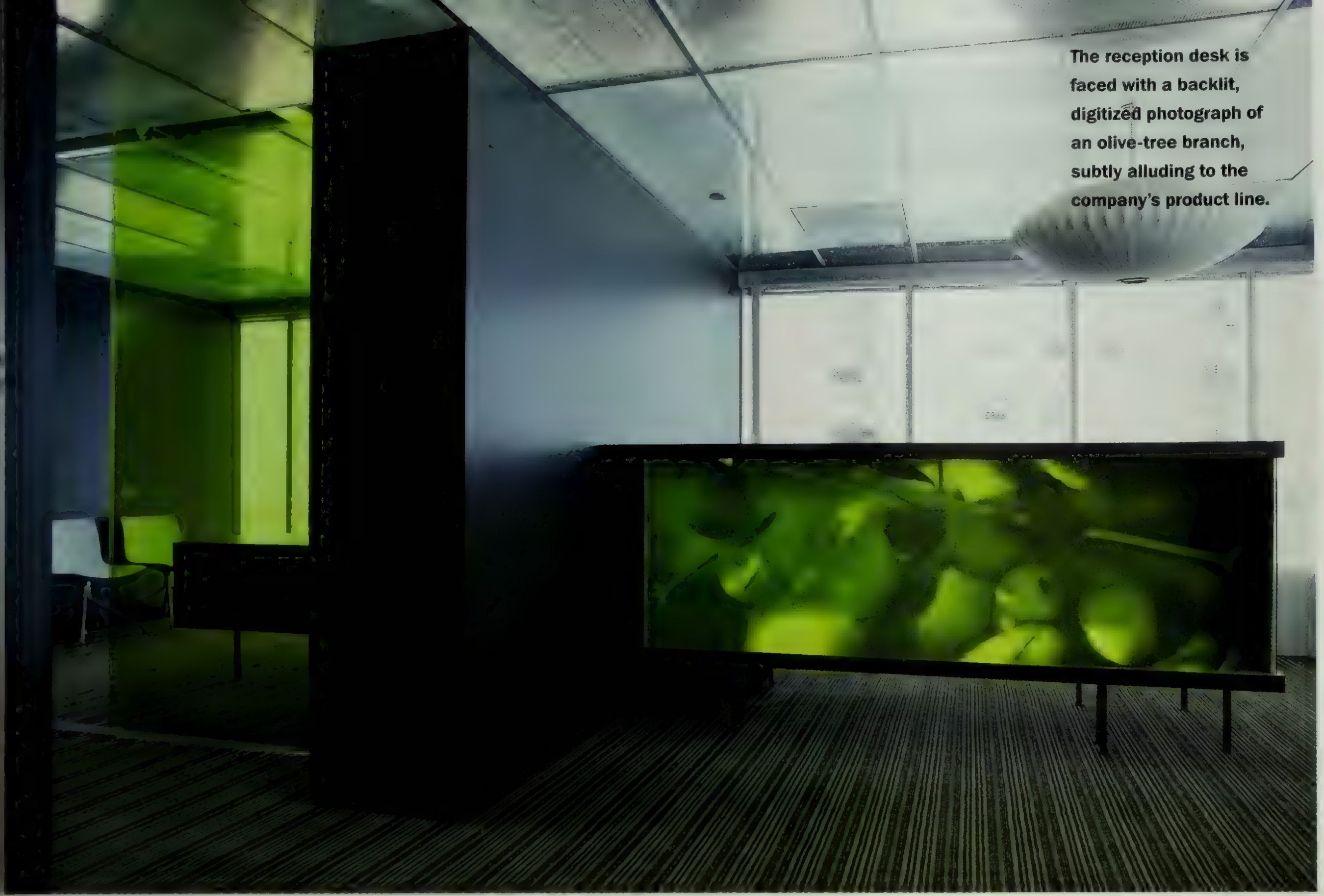


The reception desk is faced with a backlit, digitized photograph of an olive-tree branch, subtly alluding to the company's product line.

iloby Ideasystem makes transparent office design art of the branding for **Lucini Italia** in Miami

John Peter Radulski

When the gourmet Italian food importer Lucini Italia decided to relocate its headquarters to Miami, Florida, company executives wanted the interior architecture to subtly act as part of the branding experience. On a tight budget within 2,200-square foot space, the multidisciplinary design firm Miloby easystem has created an open, largely transparent interior environment ıbued with colorful graphics and sweeping views of Biscayne Bay.

New York–based Miloby Ideasystem was founded in 2001 by chitects Milana Kosovac and Tobias Lundquist to provide architectural, terior-design, branding, packaging, and related creative solutions. ending backgrounds that include stints at large architecture firms and perience designing products and music videos, the partners had also llaborated on Chicago-area offices for Lucini Italia before they were ked to help select the space for, and then design, the Florida facility.

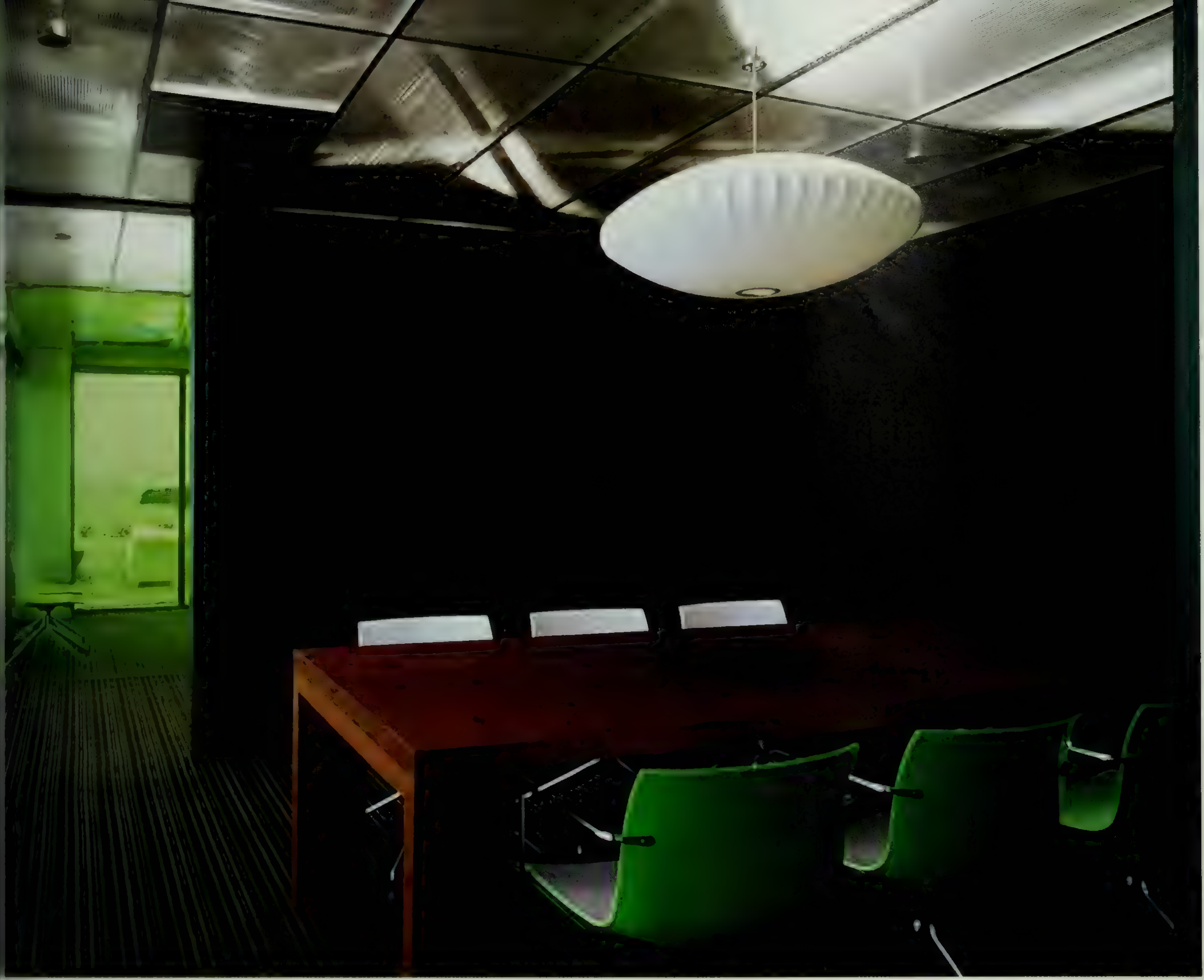
Kosovac explains that the most promising site was on the sixth oor of a low-rise building that housed a range of law, medical, and other professional offices. Although large window walls framed views of Biscayne Bay (less than a block to the east) and Miami's expanding skyline to the north, the former tenant had outfitted the space with a sea of pink marble, coffered ceilings, and other embellishments, an "introverted" design that seemed disconnected to the cityscape, Lundquist notes.

Gutting the interior to its concrete shell, the architects simplified the plan and introduced a tightly edited palette of materials. The L-shaped space now is divided into a clearly defined sequence of reception, office, conference, and support areas. Floor-to-ceiling wall dividers fabricated from gypsum board and painted a slate-gray color—Lundquist calls them bulkheads—are set perpendicular to the window walls to delineate each function area. Directing the visitor's eye toward views framed by the windows, each bulkhead also provides storage space for files and office equipment. The reception desk and workstations are attached to the bulkheads and raised on metal legs to enhance visual openness.

Mechanical systems are set above a suspended ceiling with 2-by-10-foot translucent, polycarbonate panels set into an aluminum grid. The panels' subtle moiré pattern changes appearance depending on interior and exterior lighting, so the ceiling functions as a diffuse light box. Visible

hn Peter Radulski, the former editor in chief of Hospitality Design, *is a free- nce writer based in Westport, Connecticut. He frequently writes for* RECORD.

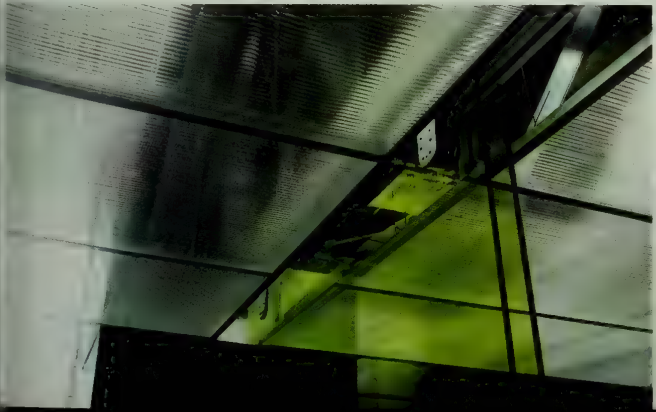
Space-dividing bulkheads, striped carpeting, and the ceiling grid direct the eye toward the east-facing window wall (above). A display of digitized photographs adds color and texture to the corridor (left). Opaque painted walls in the conference area contrast with the transparent walls elsewhere (opposite, top). The suspension syste supporting the stationary and sliding-glass panels is set within a 5½-inch-wide space within the ceiling grid (opposite, bottom).



rough each panel are abstracted silhouettes of the mechanical equip-ient above. By eliminating decorative details such as cornices and seboards and exposing the connecting infrastructure of the ceiling and all planes, the architects sought to "buttress the core narratives of sim-icity and openness," Kosovac says.

Three private offices on the north-south axis of the suite—each amed on two sides by the bulkheads and on one by the window wall—pen to a central corridor. Each office is fronted by two floor-to-ceiling minated-glass panels flanking a central sliding panel that runs along a ack ceiling. Sandwiched between two sheets of glass, a layer of green film evokes the rich color of Lucini Italia's extra-virgin olive oils. The laminated glass allows views from the main corridor through each office and beyond to the bay, while providing solar and sound insulation. The narrow space between the ceiling tracks and the suspended panels serves as a return air plenum, eliminating the need for an obtrusive grille.

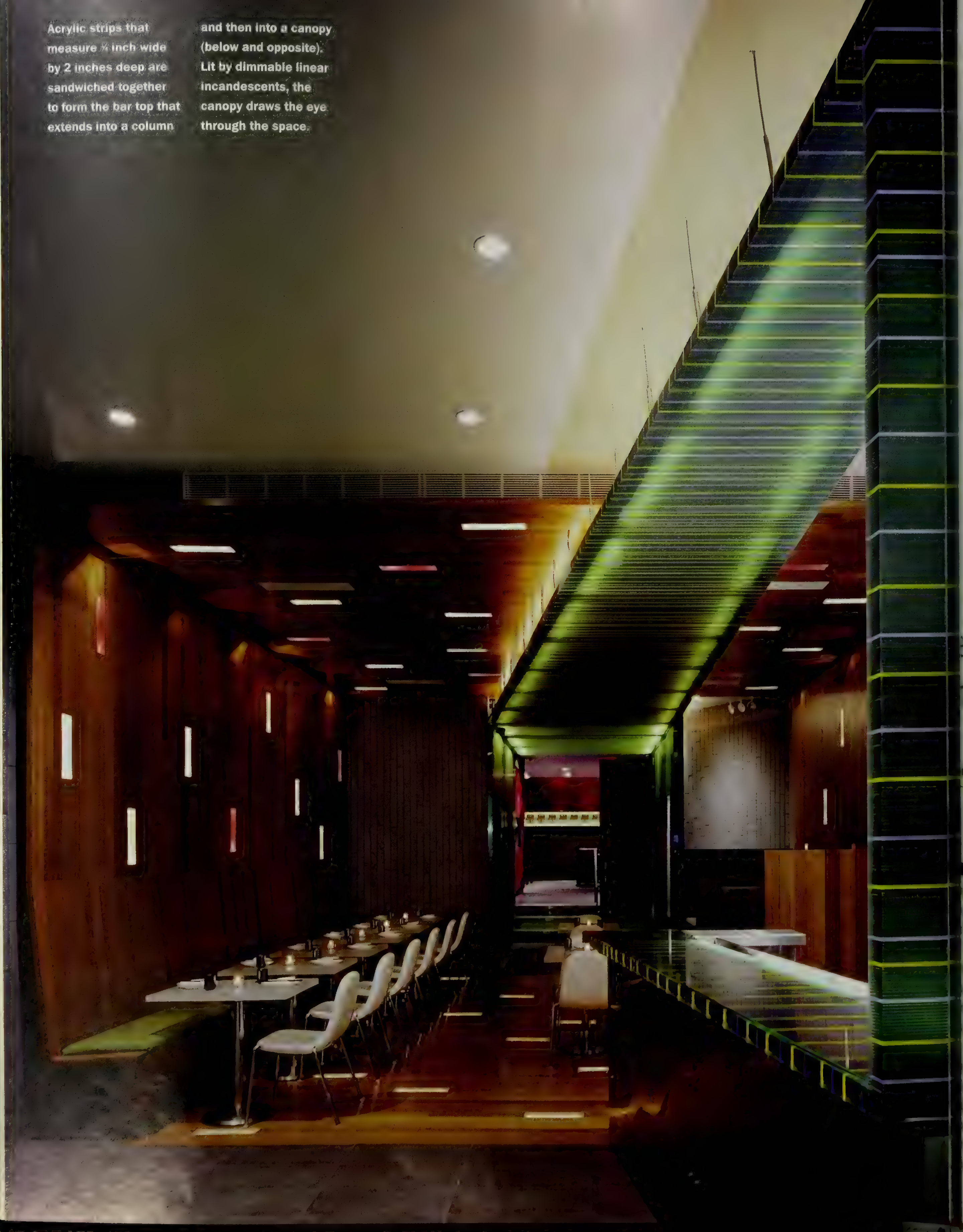
The conference room in the north-facing leg of the space is anchored by a custom table fabricated from century-old fir, a reference to traditional Italian refectory dining tables. The designers left a product storage area exposed nearby so the packaged goods function as an interior graphic element. Distilling the company's image to its essence, the office is bold yet straightforward, like the food items it sells. ■



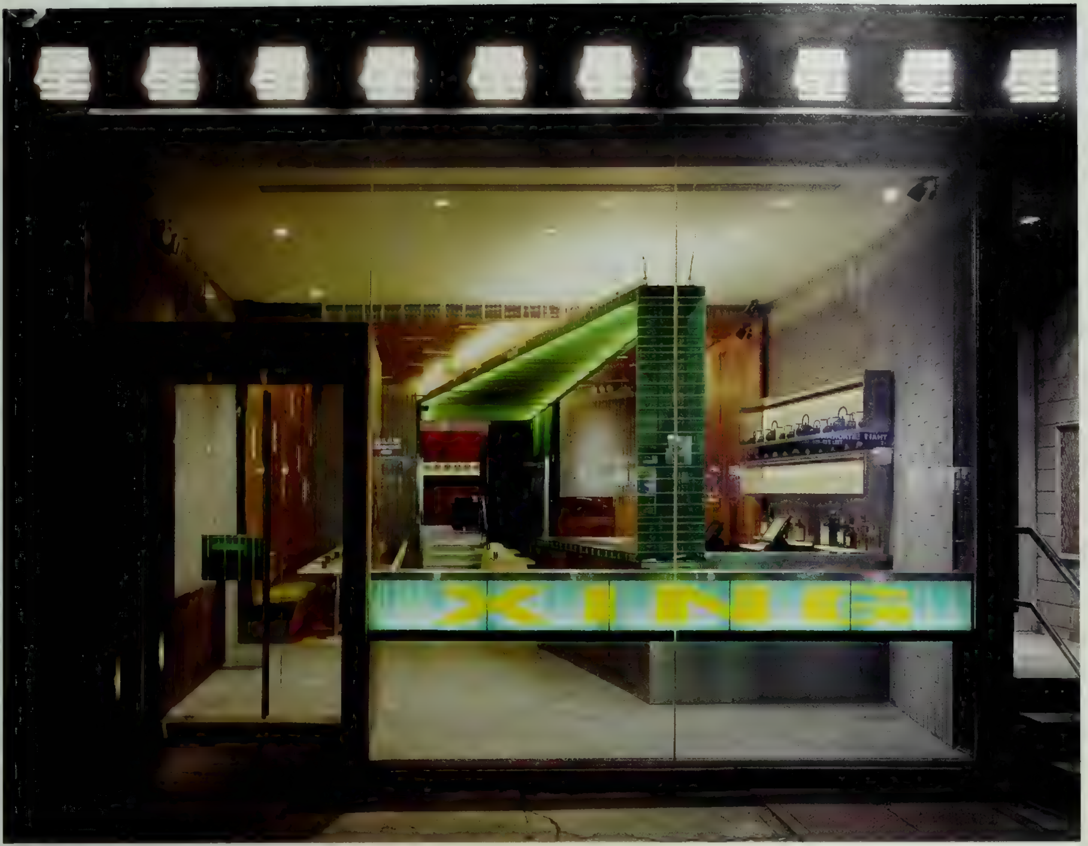
Project: *Lucini Italia, Miami, Fla.*
Architect: *Miloby Ideasystem—Tobias Lundquist, Milana Kosovac, principals; Carl Mahaney, Ashley Moore, Onki Cheng, design team*
Architect of record: *Slack Alvarez Associates*
Engineer: *Martin-Vileto Associates*
General contractor: *Rothstar Construction*

Sources
Glass partitions: *Solutia*
Ceiling panels: *GE Structural Products*
Suspension grid: *Armstrong*
Laminate: *Wilsonart*

For more information on this project, go to Interiors at **www.archrecord.com.**



Acrylic strips that measure ½ inch wide by 2 inches deep are sandwiched together to form the bar top that extends into a column and then into a canopy (below and opposite). Lit by dimmable linear incandescents, the canopy draws the eye through the space.



ewis.Tsurumaki.Lewis turns the tables on an oddly haped space, fashioning **Xing** in New York City

y William Weathersby, Jr.

Lewis.Tsurumaki.Lewis (LTL), selected as one of RECORD's emerging Vanguard architecture firms in 2000, has gone on to establish a strong track record of designing inventive New York City restaurants known for a surprising use of materials. Often orking with odd floor plans in near-crumbling spaces, and almost ways facing budget and space limitations, the team has orchestrated cus- m-tailored environments well suited for equally creative restaurateurs.

The Pan-Asian restaurant Xing in the Hell's Kitchen neighborhood f Manhattan is one of the latest winning eateries designed by LTL. Xing, hose name means "star" in Chinese, is a bright, modern space filled with ntrasting textures and crisp details. Tactile surfaces such as wood, stone, nd velvet are threaded with colorful acrylic forms that capture the light.

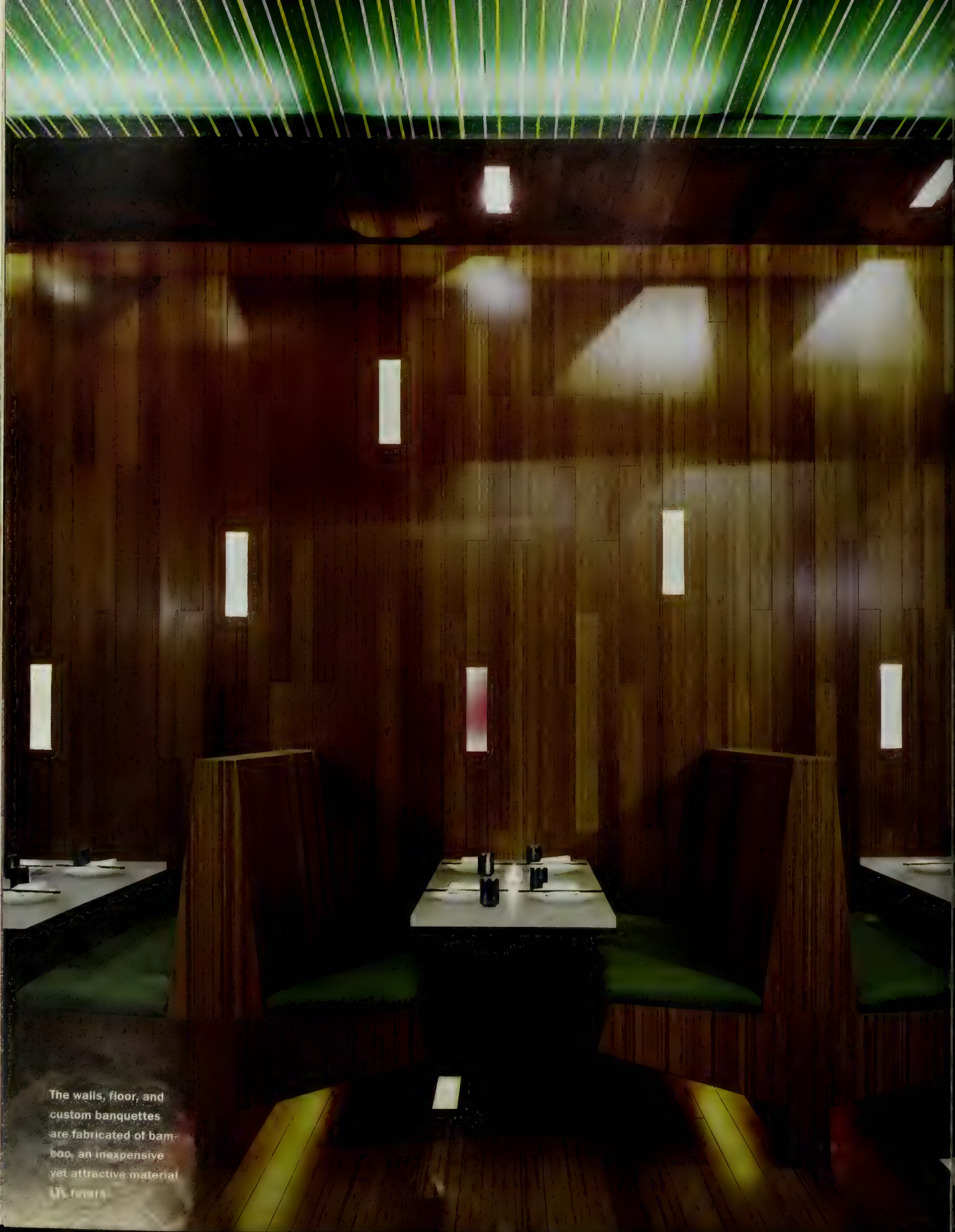
The 2,000-square-foot restaurant is located in a street-level space reviously occupied by a delicatessen and a studio apartment behind it. The floor plan, typical in New York, was barbell-shaped, in which the iddle is a bottleneck resulting from light wells placed on each side of the nement building," explains design partner David Lewis. "Rather than rce a design that would hide the distinction between the front and back, e approach was to accentuate the unique nature of each space."

Though the restaurant seats only 72 patrons, the owners wanted to retain an open ambience that could accommodate room for a prominent bar. Employing a collagelike technique of juxtaposing disparate materials (Lewis cites the Surrealist game known as the Exquisite Corpse as an inspiration), the space is composed of four distinct yet interlocking areas, each defined by texture. From front to back, patrons move through areas wrapped with hard surfaces (wood and stone) from the most public vantage points toward softer surroundings (fabric) within the most intimate dining space at the rear. Aside from small sections of the ceiling, no public area exposes any drywall.

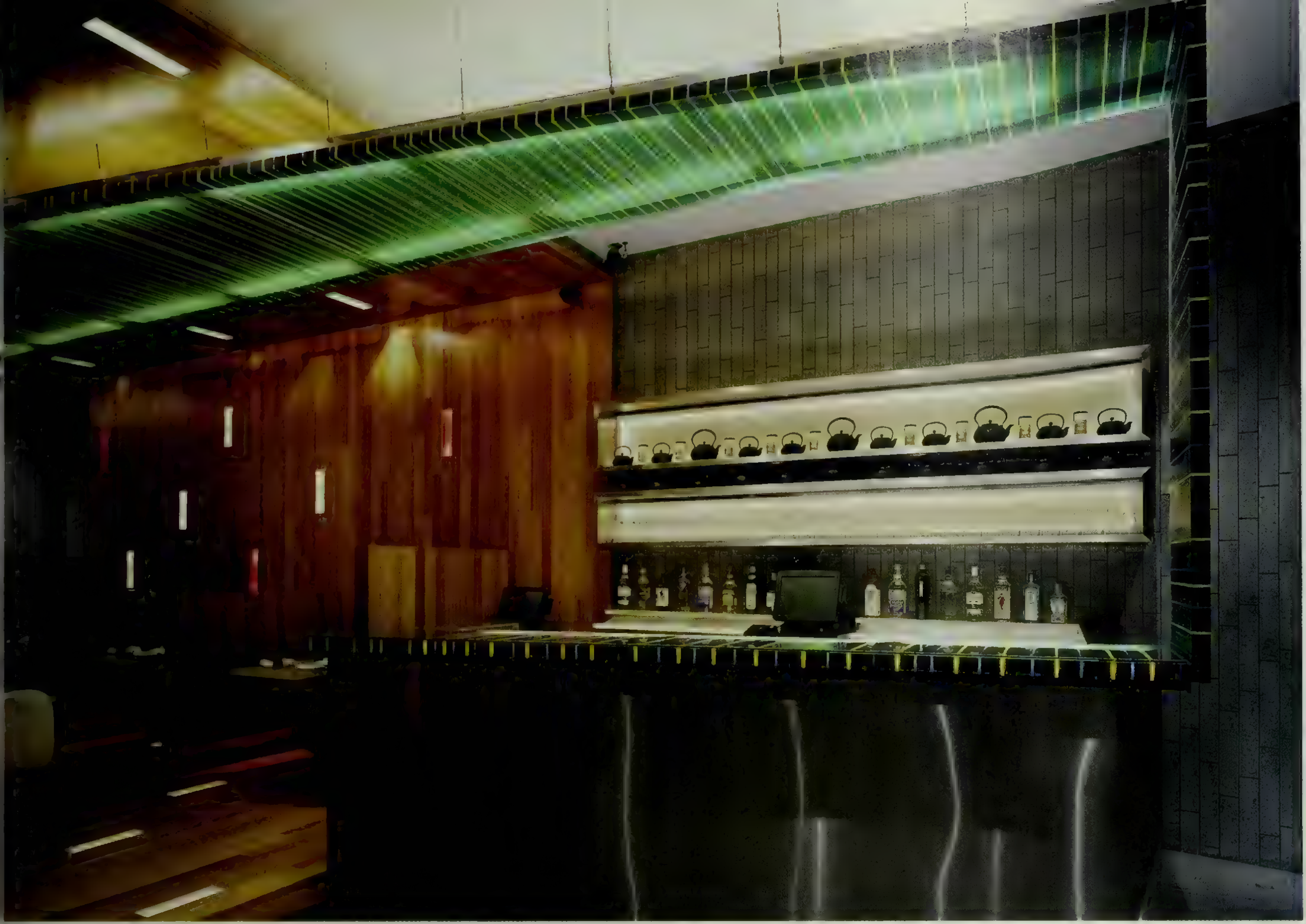
In the front entry alcove and bar area, surfaces are clad in layered stone. Vertical strips of dusky gray stone rise along the north wall,

---

Project: *Xing, New York City*
Architect: *Lewis.Tsurumaki.Lewis—David J. Lewis, Marc Tsurumaki, Paul Lewis, partners in charge; Lucas Cascardo, Adam Frampton, Katherine Hearey, Matthew Roman, Eric Samuels, Alex Terzich, project team*
Engineer: *Jack Green Associates (mechanical)*
General contractor: *Gateway Design Group*



The walls, floor, and custom banquettes are fabricated of bamboo, an inexpensive yet attractive material [illegible]



ith smoother finished stone serving as floor pavers.

Along the south wall at the front of the main room, a row of oths sits inside "a wrapper of bamboo," Lewis says. The floor, walls, ceil g, and banquette frames are fabricated from bamboo strips. Backlit slots set along each plane are streaks of light that lend a sense of motion.

A luminescent, ribbonlike form animates the main space. bricated from more than 10,000 linear feet of acrylic strips in three col s sandwiched together, the form begins as the bar top, rises up as a lumn at one end, then curves into a backlit ceiling canopy. The structure lps force the perspective to make the space appear deeper than it is. Set an angle, the canopy provides a connection to the narrow center zone, hich contains the bathrooms and a wait station. At this compact pivot int, every surface is clad in the same stacked acrylic, turning a transition ace into an attractive jewel box. Illumination from within the bathrooms eates a pattern of shadow and light across the striped surfaces.

With its lower ceiling heights, the rear dining room is an inti ate inner sanctum. Red-velvet panels cascade down the walls to meld to banquettes. Outfitted with an aquarium, the dimly lit room evokes a cret center at the end of a journey, awaiting the discovery of diners. ■

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mboo flooring: *Teragren*
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For more information on this project, go to Interiors at **www.archrecord.com**.

The bar and canopy are set at an angle to slash through the bamboo-clad front room (above). A bar top combining three colors of acrylic catches the light. The rear dining room is clad in velvet panels (below).

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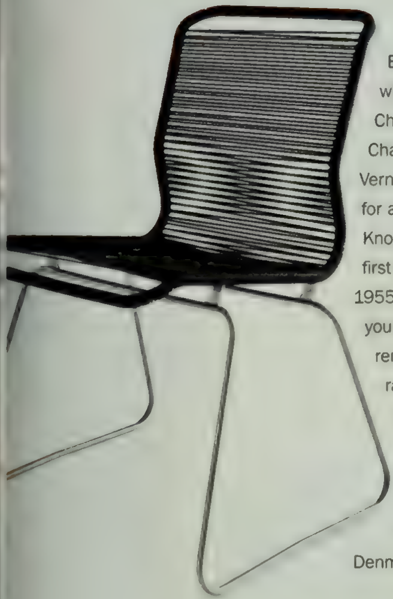
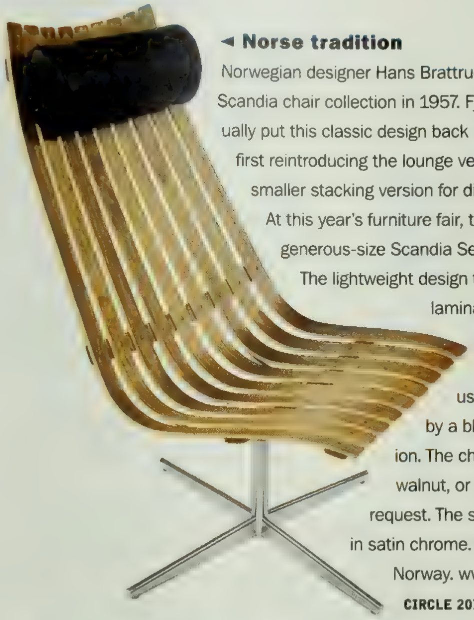
Interiors Products
:ologne Furniture Fair

Often referred to as the "second-most-important" furniture show of the year after Milan, imm Cologne welcomed thousands of visitors in January to its new fairgrounds on the banks of the Rhine. *Josephine Minutillo*



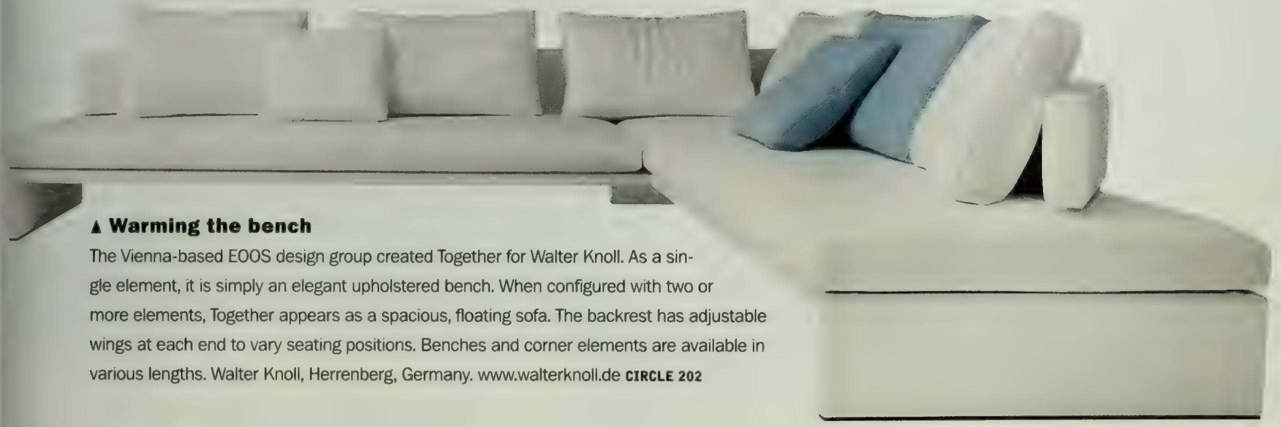
◄ Panton Chair precursor

Before making a name for himself with iconic designs like the Cone Chair and the eponymous Panton Chair, legendary Danish designer Verner Panton designed his first chair for a restaurant in Tivoli, Copenhagen. Known as the Tivoli Chair when it was first mass-produced by Fritz Hansen in 1955, it has been reintroduced by the young Danish firm DJOB, which has renamed it VP1. Originally designed in rattan, the plastic weave is now available in various colors for use indoors or out. DJOB has also introduced a bar and lounge version of the chair based on Panton's sketches. DJOB, Allerød, Denmark. www.djob.dk **CIRCLE 200**



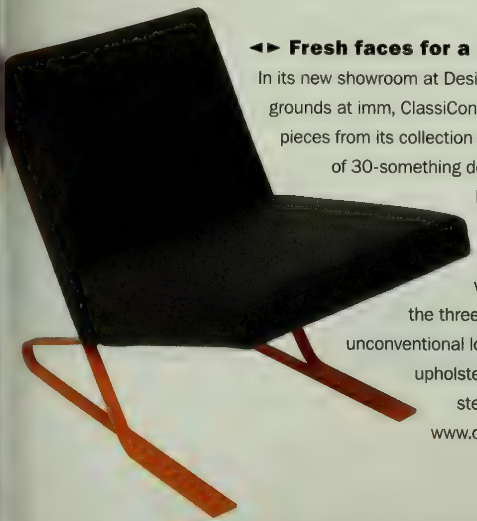
◄ Norse tradition

Norwegian designer Hans Brattrud created the Scandia chair collection in 1957. Fjordfiesta has gradually put this classic design back into production by first reintroducing the lounge version, as well as a smaller stacking version for dining or office use. At this year's furniture fair, they presented the generous-size Scandia Senior easy chair. The lightweight design features curved laminated-wood strips that comfortably conform to the user's shape, topped by a black leather cushion. The chair is available in walnut, or other woods upon request. The swivel base comes in satin chrome. Fjordfiesta, Molde, Norway. www.fjordfiesta.com **CIRCLE 201**



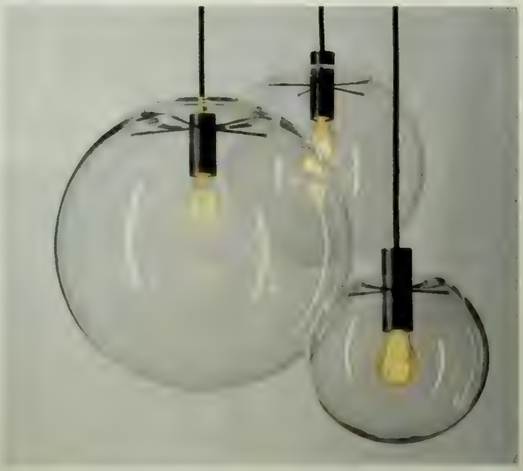
▲ Warming the bench

The Vienna-based EOOS design group created Together for Walter Knoll. As a single element, it is simply an elegant upholstered bench. When configured with two or more elements, Together appears as a spacious, floating sofa. The backrest has adjustable wings at each end to vary seating positions. Benches and corner elements are available in various lengths. Walter Knoll, Herrenberg, Germany. www.walterknoll.de **CIRCLE 202**



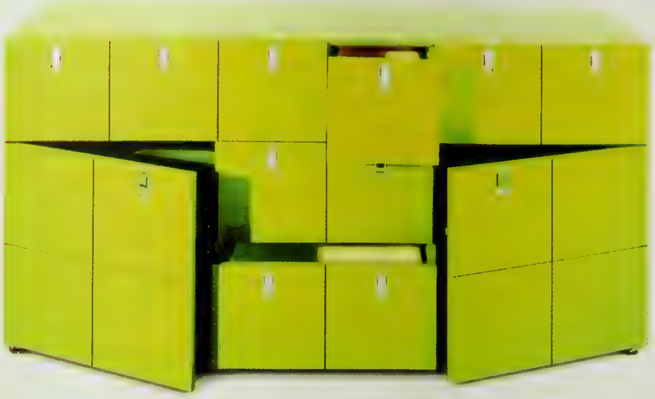
◄► Fresh faces for a classic collection

In its new showroom at Design Post, just outside the main fairgrounds at imm, ClassiCon introduced new versions of classic pieces from its collection alongside brand-new items by a group of 30-something designers. Selene is a suspension lamp by German designer Sandra Lindner. The transparent, blown-glass diffuser houses a single, 60-watt bulb with a decorative filament. Satyr, by the three-person design group For Use, is an unconventional lounge chair with a spring back. Fabric-upholstered cushions rest on a powder-coated steel frame. ClassiCon, Munich, Germany. www.classicon.com **CIRCLE 203**



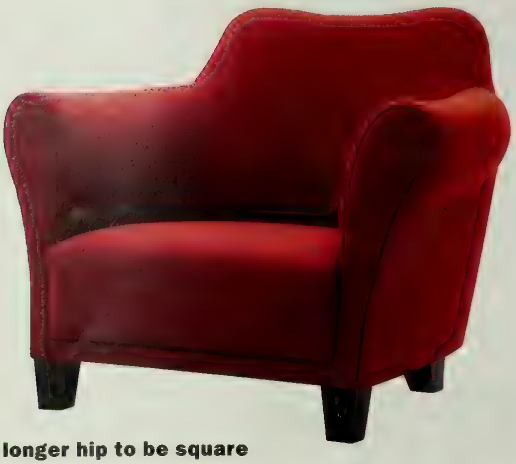
Interiors Products

Cologne Furniture Fair



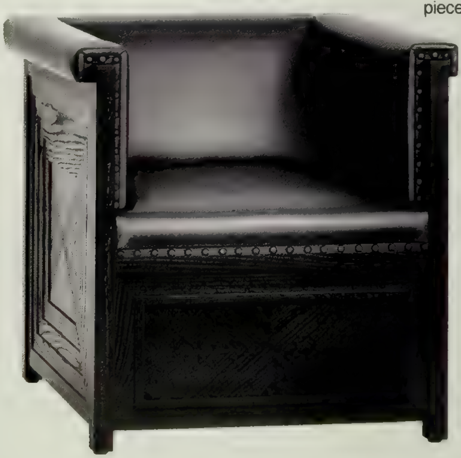
▲ Beautiful boxes

Behr International's collection of wall units, consoles, tables, and shelving has been created by Germany's leading furniture designers, including Peter Maly and Werner Aisslinger. Maly, who also serves as art director for the company, designed Menos, a line of brilliantly colored, lacquered cabinets. Available in a variety of configurations, Menos is designed to seamlessly accommodate media equipment. Behr International, Osnabrück, Germany. www.behr-international.de **CIRCLE 204**



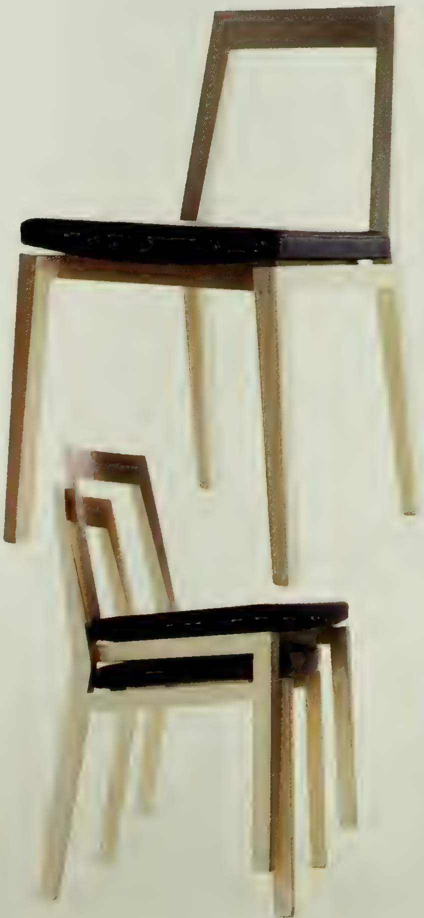
▲▼ No longer hip to be square

Josef Hoffmann was a leading member of the Vienna Secession and founder in 1903 wi Koloman Moser of the Wiener Werkstätte, an avant-garde workshop involved in the des and crafting of furniture, fabrics, and ceramics. His iconic designs have been reintroduce in Wittmann's Recreation Josef Hoffmann range. Wittmann has added two very different pieces to the collection for 200 The Musikzimmer armch (left), with its cubelike form, is an unmistakable Hoffmann design from th first decade of the 20th century. The Salon armchair (above), inspired by an undated drawing, suggests a later period when Hoffmann's rectilinear designs were replaced wi more florid and organic ones. Wittmann, Etsdorf, Austria. www.wittmann.a **CIRCLE 205**



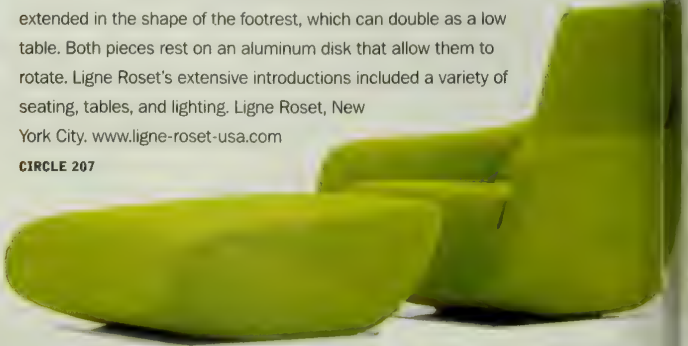
► Straightforward design

Designed by the young Danish duo of Christina Strand and Niels Hvass, the Straight Chair's simple lines and light construction strip seating to its bare essentials without forgoing comfort or beauty. The solid wood frame is available in oak, ash, or walnut, with seat cushions in fabric or leather. Matching tables complete this collection by Tranekær Furniture, a young company that began furniture production 30 years ago on the grounds of Tranekær Castle on the Danish island of Langeland. Tranekær Furniture, Aarup, Denmark. www.tranekaer-furniture.com **CIRCLE 206**



▼ Sinuous seating

With Shaman, the new armchair by Ligne Roset, French designer Eric Jourdan reaches a new level of fluid design first seen in Tolozan and Snowdonia, his earlier seating pieces for the company. The lines of the armchair, featuring an integrated seat cushion, are extended in the shape of the footrest, which can double as a low table. Both pieces rest on an aluminum disk that allow them to rotate. Ligne Roset's extensive introductions included a variety of seating, tables, and lighting. Ligne Roset, New York City. www.ligne-roset-usa.com **CIRCLE 207**



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Products Walls & Ceilings

Our focus on **walls & ceilings** includes a range of product types, from a more healthful interior paint to lightweight ceiling panels that borrow technology from the aircraft industry. The surfaces that surround us continue to become more lightweight, sustainable, durable, and **acoustically enhanced.** *Rita Catinella Orrell*

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rer of POP Panels, has signed an
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oup, an importer of Scandinavian
oducts based in Washington state.
P surface panels are a three-
mensional, form-pressed plywood
e for modern interior decoration
ith wood. Panels are available in
ur standard surface options: light
rch, warm cherry, walnut, and
und-absorbing cork.

Pop panels are manufactured
Finland according to strict envi-
nmental standards. They come in
o standard sizes: a 15¾"-square
e and a smaller, 7⅞" panel. Special
lor lacquers and wood finishes
are available on large-scale projects. Panel elements are mounted with concealed aluminum fittings that provide a neat edge; fittings are included in the panel price and shipped complete. To increase durability and facilitate cleaning, the product has been laminated with an invisible transparent matte film.

Reflecting the influence of Midcentury Modern and an adherence to Scandinavian design simplicity, POP panels can be used on walls, ceilings, room dividers, retail elements, reception desks, built-in seating units, and as components applied to custom furniture. Hightower Group also offers flat panels in both standard sizes and all four finish options that are compatible with the POP panel system. Hightower Group, Bellingham, Wash. www.hightoweraccess.com **CIRCLE 208**

The POP pressed-plywood panel system can add dimension to a room as an alternative wall decor (left) or ceiling detail (below).

reen interior paint ne offers a warm- oned color palette

lf-proclaimed "color nerds" Virginia
ung and Janie Lowe created the
lo Colorhouse brand of Green
al–certified interior paints to
dress the industry's need for envi-
nmentally responsible paints
fering a wide range of color choices.
eir initial collection of 40 warm-
ned colors has been grouped into
ven categories, from pastels to
ights found in nature. Available in
rable flat, satin, and semigloss fin-
es, the paint emits no VOCs and
mold- and mildew-resistant.

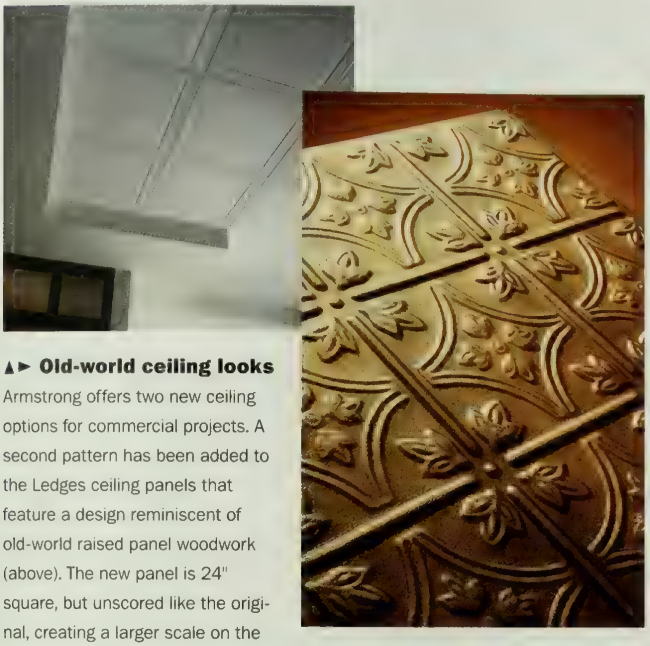
The Yolo Colorhouse palette
cludes a novel sampling system:
ant, poster-size swatches coated
th real paint, not ink. A low tack
rip of tape on the back allows spec-
ers to move colors from wall to
all, saving discarded sample quarts
paint from entering the waste
stream. Made in collaboration with Rodda Paint Company, the collection is available throughout the West Coast and can be shipped nationwide. Yolo Colorhouse, Portland, Ore. www.yolocolorhouse.com **CIRCLE 209**

Sound-control products for multifamily use

Supress Products has announced the nationwide availability of its Supress-branded sound-engineered drywall, steel, and wood products to address noise- and sound-control within commercial and residential structures.

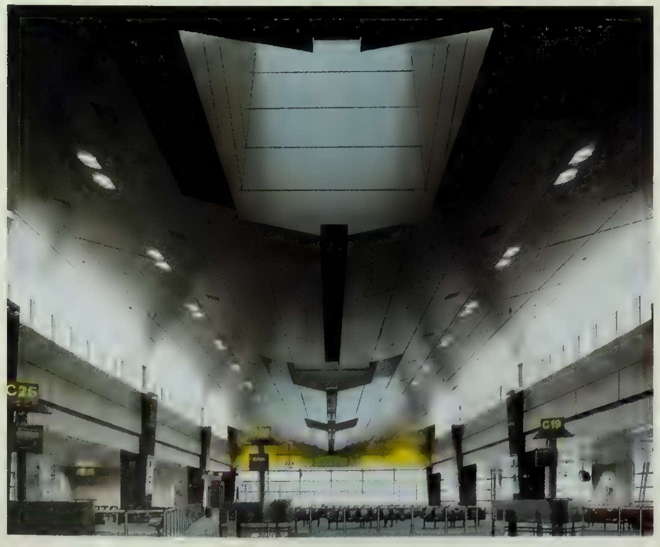
Specifically designed to meet the needs of multifamily developers, builders, and contractors, Supress products deliver unprecedented sound- and noise-control in a nonmetallic, thin-panel construction that does not interfere with cellular reception or network operation. Noisy rooms in the home, such as home theaters, can be acoustically enhanced by adding a layer to the existing wall. In new construction, Supress panels attach directly to the wall studs or the floor joists. The panels are fire-rated (ASTM E 119) and available in standard 4' x 8' panels in ½", ⅝", ¾", and 1" thicknesses. Supress Products, San Rafael, Calif. www.supressproducts.com **CIRCLE 210**

Supress has the acoustical performance of up to eight layers of standard drywall.



▲► Old-world ceiling looks

Armstrong offers two new ceiling options for commercial projects. A second pattern has been added to the Ledges ceiling panels that feature a design reminiscent of old-world raised panel woodwork (above). The new panel is 24" square, but unscored like the original, creating a larger scale on the ceiling plane. A new paint-finishing technique designed for use on Armstrong TinCraft Circles ceilings (right) produces a hand-crafted antiquated effect. The look is ideal for use in boutiques and other types of speciality retail and hospitality environments. Armstrong World Industries, Lancaster, Pa. www.armstrong.com/ceilings **CIRCLE 211**



▲ Fitting ceilings for extra-large spaces

The XL Panel is Hunter Douglas's latest product addition to the Luxalon line of metal ceilings. Designed specifically for spaces such as airports, convention centers, and sports arenas, XL Panels can span up to 5' in width and 15' in length. The panel incorporates composite technology from the aircraft industry—an intricate honeycomb structure is embedded within the panels' aluminum skin, providing strength but no extra weight. In addition, XL features 70 percent recyclable content and no VOCs. Hunter Douglas Contract Ceilings, Norcross, Ga. www.hunterdouglascontract.com/ceilings **CIRCLE 214**

► LEGO-inspired pediatric center

More than 1,500 feet of Flex-C Trac from Flex-Ability Concepts were used to create sweeping elliptical walls and soffits and curved planter boxes throughout the 60,000-square-foot Ranken Jordan Pediatric Rehabilitation Center in St. Louis. Designed by St. Louis–based Lighthouse Architects, Ranken Jordan is the only subacute pediatric hospital in the Midwest. The architects consulted with patients to determine what features they would like to see in the center and had them construct models of the building with LEGOs. Flex-Ability Concepts, Oklahoma City. www.flexc.com **CIRCLE 212**

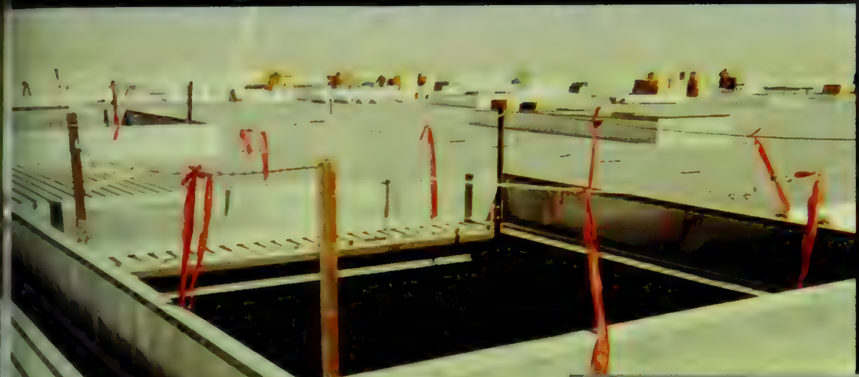
◄ Increased load tolerance

Simpson's new Steel Strong-Wall is a composite of steel and wood that provides allowable loads between tw to three times higher than the origina Strong-Wall. The design resists distor tion of the center section and results in sustained vertical-load capacity. Walls are available in five widths fron 12" to 24" and offer an ideal solution to narrow garage-wall returns. Simpson Strong Tie, Dublin, Calif. www.strongtie.com/strongwall **CIRCLE 213**

▼ Alternative extrusion material

At last November's GreenBuild show in Atlanta, Novawall Systems introduced Novawa EcoTrack, a PVC-free, 100 percent recyclable plastic extrusion for Novawall's site-fab ricated stretch-fabric ceiling system. Novawall researched several plastics compoun for two years before finding a PVC-free alternative that has the same strengths as th company's PVC-based product and passes the required fire standards for use in cor mercial interiors. Novawall Systems, Alexandria, Va. www.novawall.com **CIRCLE 215**

oof Products, Inc.
r Unique Roof Accessories.



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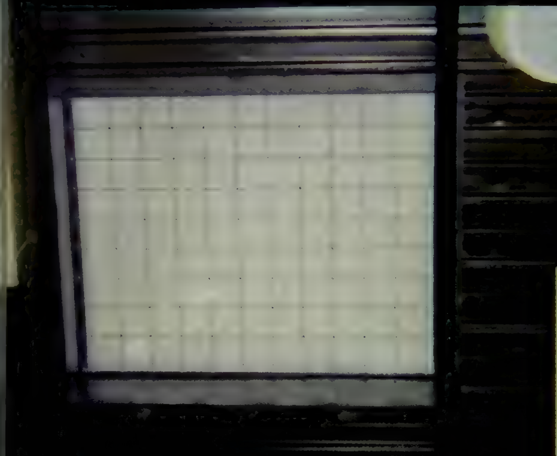

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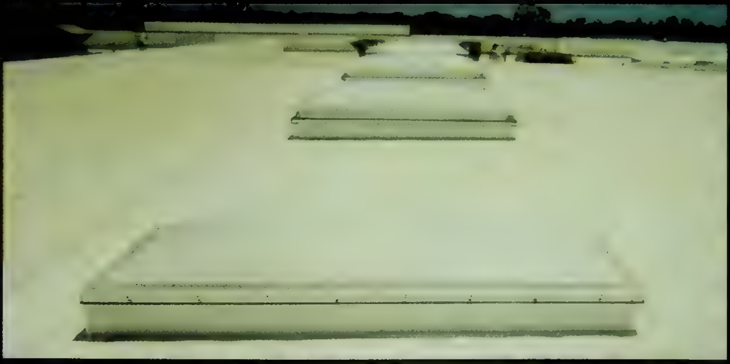

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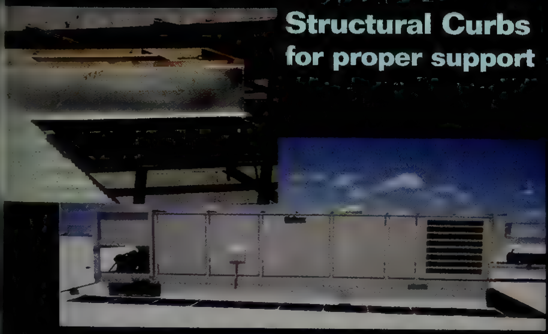

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roduct Briefs

◄ A relief for architects

Using hallmark techniques developed over three decades, the Architecture in Relief studio produces handcrafted metal reliefs featuring a building's elevation, plan, or portrait, in bronze and aluminum. The custom panels are ideal for lobbies, boardrooms, and architectural offices; past clients include the Boston Public Library and the Smithsonian Institution. Architecture in Relief, New York City. www.architectureinrelief.com **CIRCLE 216**

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n milling and tight manufacturing tolerances, PlybooSport requires less sanding
labor than alternatives. The flooring comes in a standard ¾" x 2¼" x 24" size.
ith & Fong, San Francisco. www.plyboo.com **CIRCLE 218**

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he workplace furniture arena,
n has now developed a line of
ssroom furniture suited for
tructional and meeting spaces.
line includes ergonomic and
ice-saving desks, chairs,
rage, and desk accessories
spaces that undergo regu-
reconfiguration due to
nges in teaching methods,
ancing technologies, and class
. The Hon Company, Muscatine, Iowa.
w.hon.com **CIRCLE 219**

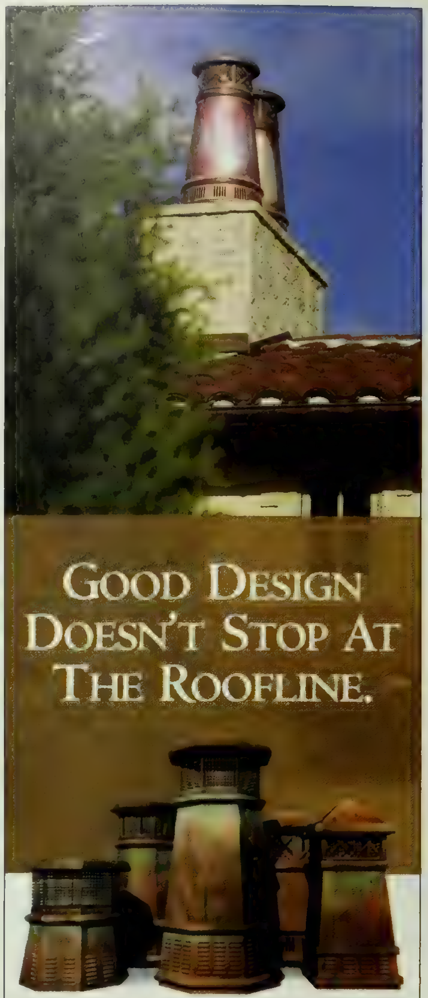
Product of the Month Clodag Spa Collection

According to the International Spa Association, in 2004, 136 million visits were made to spas in the United States, generating an estimated $11.2 billion in revenues. In response to this healthy market for spa design, Clodagh Design and Boden Furnishings have collaborated to produce the first full collection of furniture specifically designed for spa use. "In our work over the past couple of years it, seemed that every renovation or new build included a spa," says Bob Angus, cofounder of Boden, "and in each project there was more square footage dedicated and more sophisticated design than before." Boden Furnishings, a manufacturer of high-end hospitality furniture, partnered with Clodagh Design, a firm known for its high-profile spa projects, to create a collection that fills the void in the market. The collection includes a range of tables (including the Caitra manicurist table, above), chairs, stools, benches, shelving, storage (including the Kevala locker group, left), and accessories for both public and private areas of the spa. A range of standard finish options are available, from light to dark wood stains. Boden Furnishings, New York City. www.bodenfurnishings.com **CIRCLE 217**

► Luminous plastic clears the table

MB Wellington Studio collaborated with Bergmeyer Associates to apply luminous Lightblocks plastic panels into the design of Table 1280, a new, 150-seat restaurant at the Woodruff Arts Center in Atlanta. In addition to creating the restaurant's tabletops from the material, the designers used Lightblocks for the restaurant's ice-colored host station and 26'-long, 4"-thick bar, both of which incorporate dramatically cantilevered slabs. The material was also used for the 6'-long, custom rectangular-shaped sink that passes through a mirrored wall that separates the Men's and Women's rooms. Lightblocks is customizable, scratch-resistant, and 100 percent recyclable. MB Wellington Studio, Nashua, N.H. www.lightblocks.com **CIRCLE 220**

more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Products, then Reader Service.



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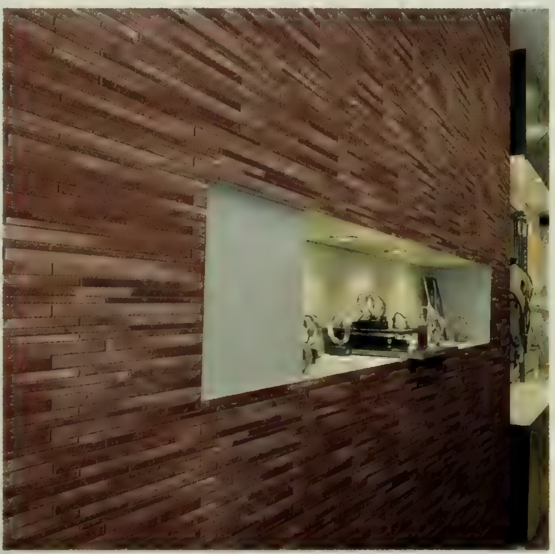
Product Briefs Cersaie Tile Show

A world leader in ceramic tile, Italy hosts the Cersaie trade show each yea in Bologna. At the 2005 show, exhibitors presented a wide range of flexib products that go far beyond conventional uses. *Jane F. Kolleeny*

▲► Fabriclike textures/vibrant colors
Inspired by the texture of fabric, the simple elegance of the Next collection from Atlas Concorde, shown above, creates a continuous uniformity due to its ground edges for closed joint laying and full-tile pattern. The porcelain stoneware tiles are available in Snow, Ivory, Lead, Canvas, Sage, Gray, Smoke, and Black, in a satin finish. Brush-applied concrete and resin finishes contribute to the vibrant colors of the View collection (above right). Available in red, orange, green, and blue, in 30½" x 56" and 15" x 56" sizes, these tiles can occupy entire wall sections adding a graphic motif to spalike, Minimalist bathroom decors. Italian Trade Commission, New York City. www.italytile.com **CIRCLE 221**



◄ Layers of earth, recreated in porcelain tile
Appearing like the layers of rock in a geological formation, this collection of enameled porcelain tile is from Gaya, a Tile of Spain manufacturer. Called Stratos, it is named for its stratified, variegated appearance. Ideal for indoor or outdoor installations, the 13¼"-square wall tiles can be cut into desired sizes. Available in copper, green, gray, black, and cream, each color, combined with its unique textured surface, creates a distinctive visual effect. Stratos works well in residential living rooms, bathrooms, and kitchens, and in commercia projects such as shopping malls. Tile of Spain Center, Coral Gables, Fla. www.spaintiles.info **CIRCLE 222**

◄ Imitation animal skins

This collection of textured tiles replicates the organic forms of animal skins, including leather, crocodile, and elephant. Shown here is Ma Touche, part of a new collection by Rex Ceramiche Artistiche. Made possible through "TwinPress" technology, this fine porcelain stoneware is compact, transparent, and soft. Offered in four different textures—Cuir, Peau, Eleph, and Croco—each has a distinct material depth and tacticity. Colors include Ivoire, Tabac, and Charbon; the tiles measure approximately 24" square. Hastings Tile and Bath, New York City. www.hastingstilebath.com **CIRCLE 223**

► A touch of deep lue elegance

ne of the various styles unched by Ceramiche Coem is year, Pietra d'Irlanda orcelain stoneware is a vari- nt of the rich blue stone nown as Belgian Blue Stone. vailable in an Irish blue or ish gray color, Pietra 'Irlanda has a smooth, ele- ant surface, pleasing to the ouch. Its squared and honed dges, delicate filigree work, recise tones, and geometric rid pattern give it a contemporary look. The ⅜"-thick tiles come in matte and matte/rectified finishes in a 2"-square and 1" x 2" size. Matching ullnose and step trims as well as a decorative border are available. Italian Trade Commission, New York City. ww.italytile.com **CIRCLE 224**

First tiles of spring

een through the poetic eyes of Massimo Gardone, nature s revealed in the medium of ceramic tile in Haute Couture, part of Viva Ceramica's Limited Edition line (left). Reminiscent of the flowery 6 or 12 tile panels that were a hit in the 1980s and '90s, the line has updated the look with bigger flowers, subtler colors, and a bold, mural-like display. Also from Viva Ceramica is the Floranova line, composed of six panels, six single flowers, and three flooring tiles. Italian Trade Commission, New York City. www.italytile.com **CIRCLE 225**

◄ Anatomically correct mosaics

Architect Nigel Coates transforms the human figure into the medium of ceramics for Bodypark, an unusual tile series from Ceramica Bardelli. Using computer scanning, a lifelike image is achieved that is at once natural and abstracted. The collection includes two full-body and two half-body figures depicted in platinum on brilliant (Bianco Extra) and matte whites in an approximate 8"-square size. Italian Trade Commission, New York City. www.italytile.com **CIRCLE 226**

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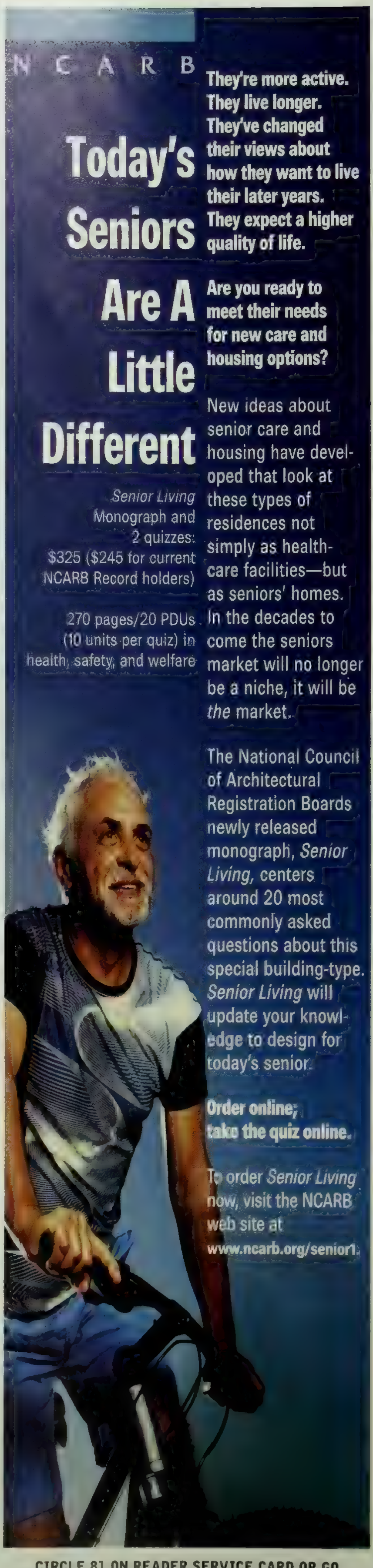

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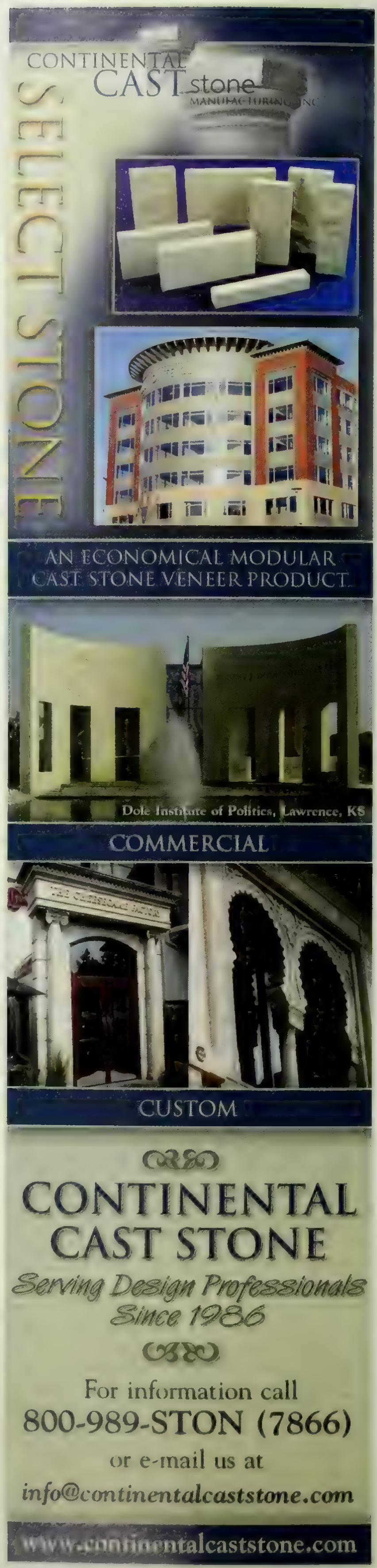
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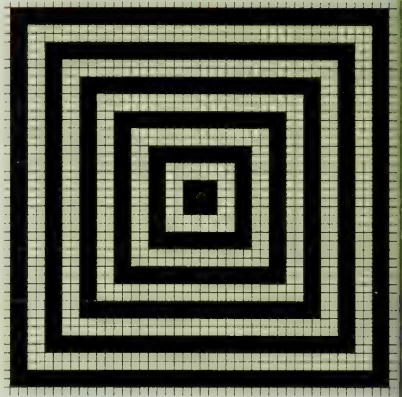
Product Briefs Cersaie Tile Show



► The beauty of mosaic in geometric form

At Cersaie this year, seven new patterns by four designers for indoor and outdoor coverings were debuted by Bisazza. Within this collection is the mosaic cube pattern called Wengé, a durable tile appropriate for cladding both walls and floors. It is particularly good for floor locations where heavy traffic may occur. Designed by Carlo Dal Bianco, who also designed the company's flagship stores in Milan, Berlin, London, and New York, this computer-generated pattern is derived from the warmth of wooden floors. Wengé is shown here in Nero, made from ½"-square Opus Romano tiles. In the showrooms, the mosaic collections are displayed as if they were books in a large library. Bisazza, New York City. www.bisazzausa.com **CIRCLE 227**

▲ Subtle earth tones enliven these organic forms

The Gypsum collection of premium-quality white-paste tile from Ceramgres features a velvety surface contrasted with rectangular lines in warm earthy tones. Offered in 25 colors and three sizes, Gypsum is part of the company's "Material and Nature" line. It is a double-fired, white biscuit ceramic with a rectified edge. A striped relief finish is available in certain formats. Italian Trade Commission, New York City. www.italytile.com **CIRCLE 228**

◄ Tile, the new upholstery

Lea Ceramiche presents Studies by Diego Grandi, an award-winning designer and architect. Bold geometric colors and shapes are achieved through a highly precise sanding and cutting process. Opaque porcelain is combined with glass powder to create a pattern that emerges from the ceramic base through color and light. By creating textilelike shapes in the tile, the designer goes beyond surface covering into the realm of furnishing by almost "upholstering" the walls and floors. Sizes range from 12" square to 35" x 53". Italian Trade Commission, New York City. www.italytile.com **CIRCLE 229**

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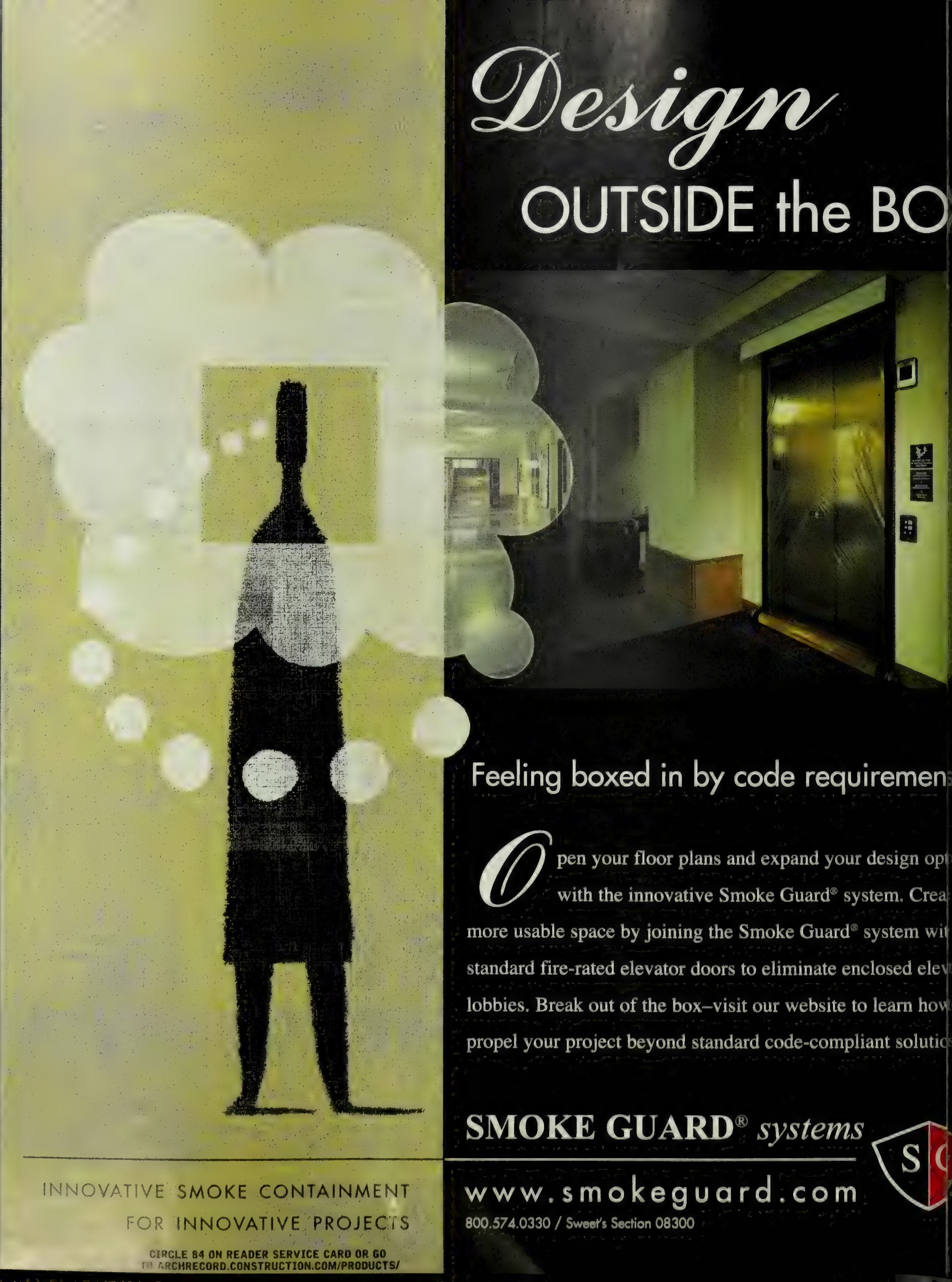

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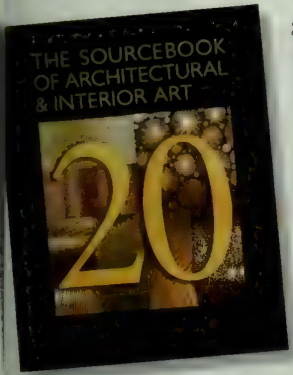
Product Resource: Literature

Great range of offerings

RangeCraft Manufacturing's new 12-page range-hood brochure depicts the wide array of hoods offered by the company. RangeCraft also specializes in the custom manufacture of concealed wood-hood blower inserts in various sizes for wall-mounted and ceiling-mounted installations. RangeCraft Manufacturing, Fairlawn, N.J. www.rangecraft.com **CIRCLE 230**

uxury shower collections

nsgrohe recently introduced a new, -page brochure that presents its tire line of Pharo luxury shower products. Titled *Bodytime*, the brochure cludes Pharo's complete line of ower panels and showerheads, dy sprays, and advanced thermoatic valves. A five-page technical ction includes dimensional line awings and product-specific feares. Hansgrohe, Alpharetta, Ga. w.hansgrohe-usa.com **CIRCLE 231**



20 artistic years later

The Guild, a distributor of original art and fine craft items, has published the 20th-anniversary edition of *The Sourcebook of Architectural & Interior Art*. This edition presents the work of more than 225 artists in 700 full-color photographs illustrating 15 categories of commissioned art. A new Web-based version of the sourcebook is also available. The Guild, Madison, Wis. www.guild.com **CIRCLE 232**

trance system CD

ecial-Lite's 2006 product catalog is now ailable on CD, giving specifiers the complete range of information needed to aluate and order the company's heavy-ty commercial entrance system oducts. Based on Special-Lite's print talog, the Windows-based CD provides portable CAD drawings in AutoCAD R12 VG format. Special-Lite, Decatur, Mich. w.special-lite.com **CIRCLE 233**

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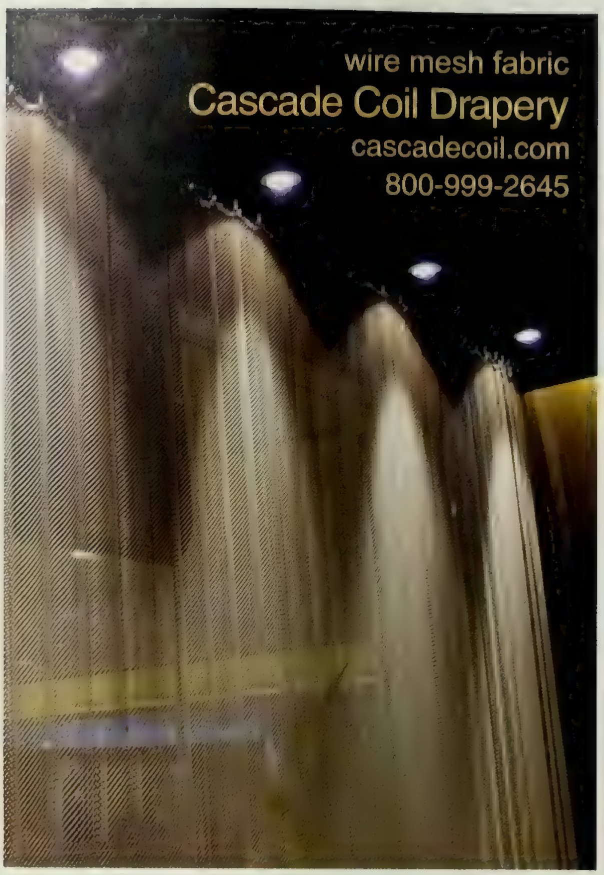

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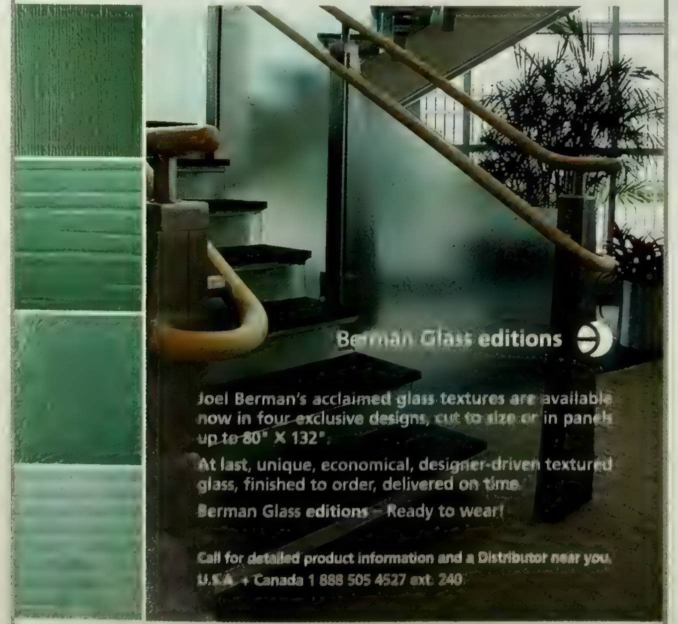

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Product Resource: On the Web

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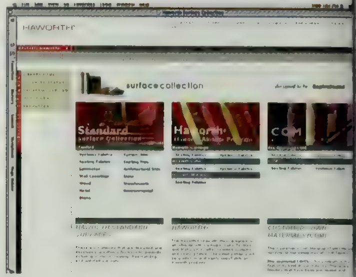
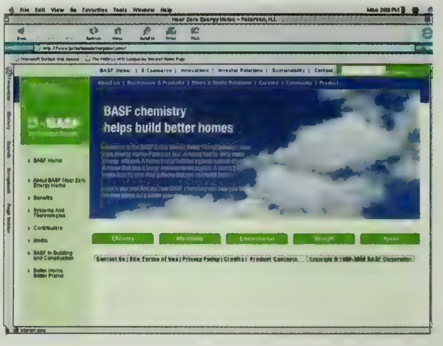


Haworth has launched a comprehensive surface collection site that can be found on the main menu as a category on the Catalog bar, or directly linked at www.haworth.com/Brix?pageID=20. The surface collection site offers three menus: one for standard finishes, one for Haworth+ (a new fabric alliance program with Carnegie, Luna Textiles, and Maharam), and one for COM An advanced search feature allows users to quickly sort materials in a variety of ways

www.betterhomebetterplanet.com

BASF's new Web site is intended as a practical learning tool for builders, architects, and homeowners about how to build homes that are 80 percent more energy-efficient, disaster-resistan faster to construct, and affordable. The site feature an interactive, multimedia presentation of the BASF Near Zero Energy Home, part of BASF's Better Hom Better Planet initiative no under construction in NJ.



www.kartell.it

Kartell's new interactive site offers info on the Italian manufacturer's latest lighting and furnishings in five languages. As you glide your mouse across the bottom menu bar, lights will illuminate and chairs will rotate. In addition to company and exhibit info, the site is set up to deliver the latest news from the cutting-edge manufacturer.

www.materia.nl

The goal of this site is to gather information on the way new mate rials are being used (and can be used) and making that info easily accessible for the worldwide A&D community. A search engine allow registered members to select an compare a growing variety of new innovative materials. Members also receive a monthly newslette

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Ongoing Exhibitions

Extreme Porosity
Los Angeles
Through March 24, 2006
This exhibition features photographs, drawings, and models designed and fabricated at UCLA by architecture and urban design students who participated in a traveling seminar led by faculty member David Erdman. The studio went to Istanbul to examine mosques reflecting 15th- and 16th-century innovations in the use of minimal surfaces where extreme lightness, porosity, and geometry are in evidence. At UCLA Department of Architecture and Urban Design

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The HOME House Project: The Future of Affordable Housing
Atlanta
Through March 28, 2006
A multiyear traveling initiative created by the Southeastern Center for Contemporary Art (SECCA) in Winston-Salem, North Carolina. The first component of the project was a national design competition and exhibition that showcased innovative solutions for sustainable low-to-moderate-income-family housing proposed by more than 440 contest entrants from around the world. At the Museum of Design Atlanta. Call 404/688-2467 or visit www.museumofdesign.org.

Architectural Art
Atlanta
Through March 30, 2006
Presented by the Foundation for Community Arts, exhibitors include Kenneth von Roenn, Walter Gordinier, Seranda Vespermann, Susan McCracken, Arthur Stern, Christian Culver, Chrisitina Lihan, and Katherine Linn, AIA. Also on view is a niche exhibition of the art of landscape design. At Mercer University Brown Art Gallery. Call 678/547-6280.

Chicago Architecture Foundation Tours
Chicago
Through March 2006
Led by trained volunteer docents, these acclaimed tours explore the architecture of the Chicagoland area via bus, boat, train, Segway, or by walking. For descriptions of all tours, visit www.architecture.org/tours.

On-Site: New Architecture in Spain
New York City
Through May 1, 2006
Featuring 53 noteworthy architectural projects, this exhibition focuses on the most recent architectural developments in a country that has become known in recent years as an important center of international design experimentation and excellence. At the Museum of Modern Art. Call 212/708-9431 or visit www.moma.org.

Prairie Skyscraper
New Haven
Through May 5, 2006
A traveling exhibition showcasing Frank Lloyd Wright's only skyscraper, Price Tower. Now celebrating its 50th year, the 19-story building in Bartlesville, Oklahoma, was an exemplar of one of Wright's ideals: a single structure incorporating residential, commercial, and public spaces. Today, the building serves as a museum of modern art, design, and architecture, housing a hotel and restaurant as well as gallery spaces. The installation for this exhibition was designed by celebrated architect Zaha Hadid. At the Yale School of Architecture. Call 203/432-2288 o visit www.architecture.yale.edu.

Symmetry
Los Angeles
Through May 7, 2006
In the world of space and time, sym metry derives its meaning from a center, a repetition of forms on mir- roring sides of an axis. This exhibitio features works by Los Angeles–base contemporary artists that use or relate to this concept. At the MAK Center for Art & Architecture L.A., a the Schindler House. Call 323/651- 1510 or visit www.makcenter.org.

Lectures, Conferences, and Symposia

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A forthcoming lecture series at the Chicago Architecture Foundation (CAF) will include the following topics: "Northerly Island: The Story of a New Public Park," with Arnold Randall, director of planning and development, Chicago Park District; "Creating New Parks from Vacant Land in Chicago," with Kathy Dickhut, acting department commissioner, Zoning and Land Use Division, Department of Planning and Development, City of Chicago; "Reclaiming Brownfields for New Public Meeting Grounds," with Kimberly Worthington, deputy commissioner, Department of Environment, City of Chicago; "Update on Block 37," with Grant Uhlir, Gensler; "The Spectacular Landscape: 17th-to-21st-Century Park Design," with Ned Cramer, curator, CAF. At the John Buck Company Lecture Hall Gallery. Call 312/922-3432 or visit www.architecture.org.

Fifth Annual McKim Lecture
New York City
March 8, 2006
Hosted by the One West 54th Street Foundation at the University Club, Institute of Classical Architecture and Classical America board member and president of the American Academy in Rome Adele Chatfield-Taylor will give a talk about Charles Follen McKim's involvement in the academy. At the Institute of Classical Architecture and Classical America. Call 212/730-9646 or visit www.classicist.org.

Craig Dykers, Snøhetta
Chicago
March 14, 2006
The Oslo-based firm Snøhetta has emerged as an international leader in design with several large and complex public projects. Principal Craig Dykers will discuss recent and upcoming projects, such as the Cultural Center at the World Trade Center site in New York, and the National Opera House in Oslo. At the John Buck Company Lecture Hall Gallery. Call 312/922-3432 or visit www.architecture.org.

Lecture: George Ranali—Iconic Form
New York City
March 16, 2006
George Ranali is dean of the School of Architecture, Urban Design, and Landscape Architecture at the City College of the City University of New York. His work has been exhibited around the world, and his office has received many AIA awards. At the City College of the City University of New York. Call 212/650-7312 or visit www.ccny.cuny.edu.

2006 Built Green Conference
Seattle
March 16, 2006
The Northwest's premier green-building conference. Industry professionals, government agencies, and students will gather to learn about and discuss environmentally friendly residential building and development. The conference will include a trade show featuring green products and services, along with numerous educational workshops on site development, energy efficiency, permits and incentives, design, marketing, and more. At th Washington State Convention and Trade Center. Call 425-460-8238 visit www.builtgreen.net.

Third Annual Lewis Mumford Lecture
New York City
March 23, 2006
The lecture on urbanism will be given by Enrique Penalosa, former mayor of Bogota, Colombia. His lecture, "A New Urban Paradigm: Building a Just and Sustainable Metropolis," will elaborate on his belief that cities in developing coun tries are in a position to create a different and better urban model than that of the industrialized worl Under Penalosa's leadership, the city of Bogota undertook a remark-

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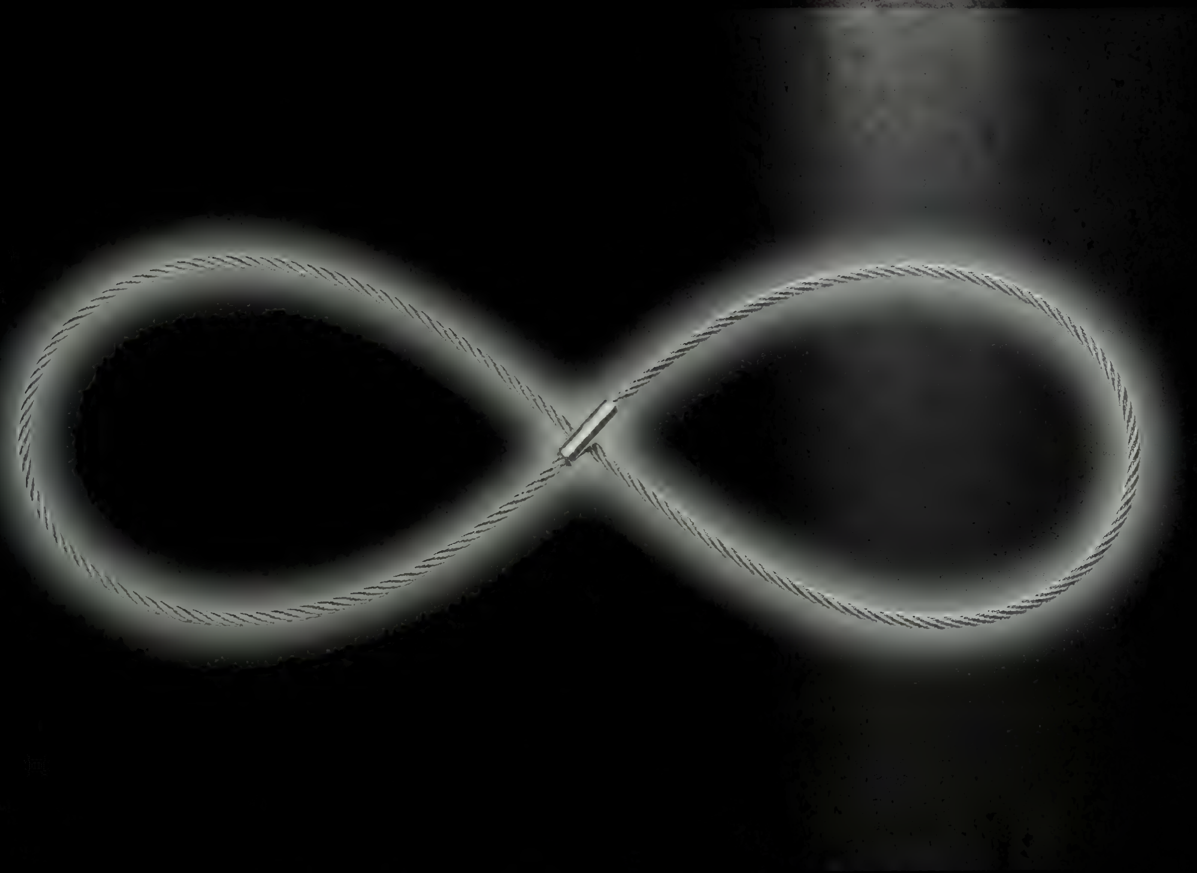

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able and transformative series of initiatives that remade a city felt to be dangerous and without hope to one in which a sense of optimism and belonging burgeoned. At the City College Great Hall. For further information, contact Kathleen Sheridan at kms@ccny.cuny.edu or Michael Sorkin, director of the Graduate Program in Urban Design, at sorkin@thing.net.

CA Boom 3
Los Angeles
March 23–26, 2006
CA Boom is the West Coast independent contemporary design show. This year, which is the show's third year, an impressive lineup of acclaimed architects and designers are set to participate in the show, which should be a major event. At the Santa Monica Civic. For additional information, visit www.caboomshow.com.

Paul Lewis
Vancouver, B.C.
March 23, 2006
Paul Lewis of LTL Architects, New York, will lecture on the firm's projects, which include restaurants; new houses in New York and Pennsylvania for private clients; affordable housing in East New York; the expansion and renovation of the Arthouse at the Jones Center for Contemporary Art in Austin, Texas; and several new commercial projects. At the C 300 Theatre. Call the Architectural Institute of British Columbia at 604/683-8588 or visit www.lecturesonarchitecture.net.

Asia Dialogues: Fertile Ground for Architecture
New York City
March 25, 2006
Asia's cities are growing at an exponential rate, and new models of designing and building offer counterperspectives for global practices. This half-day roundtable puts the spotlight on China—its government, developers, and practitioners. Architects and planners from China join their American counterparts for a lively discussion. At the Center for Architecture. Call 212/683-0023 or visit www.aiany.org.

The New Orleans Levees: What Went Wrong and What Do We Do Now?
Washington D.C.
March 30, 2006
The multiple breaches of New Orleans's levees in the immediate wake of Hurricane Katrina constitute one of the most spectacular and consequential failures of urban infrastructure in modern history. What went wrong? Is it possible to build a levee system that will reliably protect the city from future disasters? A panel of engineering experts, including Dr. Ivor van Heerden, deputy director of the Hurricane Center at Louisiana State University, will address these and related questions. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Competitions

10th Biennial Bridge Awards Competition
Deadline: March 31, 2006
Portland Cement Association (PCA) is seeking nominations for its 10th biennial Bridge Awards Competition. All types of bridges in which the basic structural system is concrete—highway, railway, pedestrian—are eligible. For further information, call 847/972-9100 or visit www.cement.org.

Edge as Center: Envisioning the Post-Industrial Landscape
Registration Deadline: March 31 2006
The Boston Society of Architects (BSA) announced recently that the city of Somerville, Massachusetts,

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will join with the BSA to hold an international urban design ideas competition for the industria Brickbottom area in East Somerville. A competi- tion prize fund of $35,000 will be awarded to th top three entrants. For details, visit www.architects.org/somerville.

Accessible Design Awards
Deadline April 3, 2006
The focus is on new or renovated buildings or other facilities that are accessible for persons o all abilities. Designers, clients, community group public agencies, and anyone else may submit specific solutions located/built in Massachusett Visit www.architects.org/awards.

Urban-Open
Deadline: April 15, 2006
A two-phase, open competition with the objectiv of honoring Chicago's commitment to sustainab ity and community development. The first phase solicits design schemes for an outdoor community space. Visit www.urban-space.org.

The SOM Prize
Application Deadline: April 28, 2006
Since 1981, the Skidmore, Owings & Merrill Foundation has helped young architects and engineers broaden their education through trave fellowships awarded annually. This award has been created in celebration of the foundation's 25-year legacy. The $50,000 grant will be awarded to the most promising student in architecture, urban design, and design, as selected b an independent jury of prominent professionals. Graduating undergraduate and graduate studen of accredited U.S. schools of architecture, urban planning, and design are eligible. For more infor- mation, visit www.somfoundation.som.com.

International Student Design Competition: Concrete Thinking for a Sustainable World
Deadline: May 3, 2006
Sponsored by the Portland Cement Association (PCA) and administered by the Association of Collegiate Schools of Architecture (ACSA), students will be challenged to investigate an innovative application of portland-cement-based materials to achieve sustainable design objectives. The competition is open to all ACSA-affiliated schools. Visit www.acsa-arch.org.

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Dates & Events

Deadline: May 9, 2006
A national open design competition sponsored by the Boston Center for the Arts (BCA). The competition will transform the Tremont Street plaza and other public spaces surrounding the BCA, which occupies an entire city block from Clarendon Street to Berkeley Street in Boston's historic South End. Registration is open to all interested persons within the U.S. regardless of background or training. Visit www.insideout.bcaonline.org.

2006 Benjamin Moore HUE Awards
Deadline: May 19, 2006
Presented by the Benjamin Moore company to honor architects and interior designers for exemplary use of color in both residential and contract projects, the awards recognize design professionals who incorporate color in innovative and imaginative ways—through the use of interior and exterior paints, building materials, textiles, and other surfaces, plus design elements and furnishings. Call 212/966-3759, x 233 or visit www.benjaminmoore.com.

Dream House with HGTV
Deadline: June 2006
High Noon Productions announces the continuation of the HGTV series *Dream House*, and seeks architects who are interested in appearing on the show. To be eligible, you must have broken ground by the first half of 2006 and be willing to have camera crews follow your home's construction from start to finish. Interested families, contractors, or architects may call 303/712-3184 or visit www.highnoonentertainment.com.

The 2006 VIP Awards
Deadline: July 1, 2006
Since 2000, Vetter Windows & Doors has recognized projects that preserve and respect the time-honored tradition of quality custom building and master craftsmanship through the Vetter Inspired Project Awards (VIP). The VIP Awards is a national design competition open to any architect, custom builder, or remodeler in the United States that has used Vetter products. Call 800/838-8372 or visit www.vetterwindows.com.

E-mail event and competition information two months before event or submission deadline to elisabeth_broome@mcgraw-hill.com.

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Flooding in New Orleans. Photo by F.T. Eyre.

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Don Alexander Hawkins, architect and architectural historian

Environmental Film Festival
March 18
Tall: The American Skyscraper and Louis Sullivan
March 19
Documenting I.M. Pei on Screen: Double Feature
Museum on the Mountain
First Person Singular

Building in the Aftermath
March 30
The New Orleans Levees: What Went Wrong and What Do We Do Now?

For more information and to register for programs, call or visit our website. Discounts for members and students.

exhibitions

Washington: Symbol and City. Photo by Liz Roll.

Jewish Washington: Scrapbook of an American Community
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on 15, 2006. The Venice Biennale trip must be taken between September 15, 2006 to November 30, 2006. Approx. retail value of trip: $10,000. Monthly drawings will be held for Sony Cyber-shot digital cameras. Entries for
the thly camera drawings must be received after November 8, 2005 and no later than December 30, 2006. There will be 14 prizes awarded. Camera drawings will take place on the 30th of each month beginning November
8, and ending December 30, 2006. Approximate retail value of prize: $350 per camera. Total Award Retail value: $15,000. Employees of The McGraw-Hill Companies, Inc. and their immediate family members and their
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Program title: "New Technologies Create New Challenges," Architectural Record (03/06, page 163). 036EDIT1

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2.	a	b	c	d	**7.**	a	b	c	d
3.	a	b	c	d	**8.**	a	b	c	d
4.	a	b	c	d	**9.**	a	b	c	d
5.	a	b	c	d	**10.**	a	b	c	d

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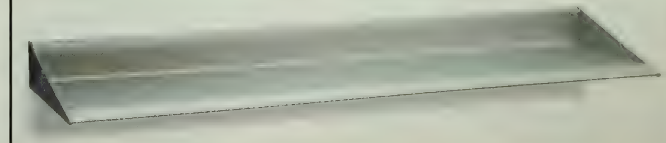

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Program title: **"The Essential Design Element for Any Office Space," (03/06, page 179)** 036SPONEB

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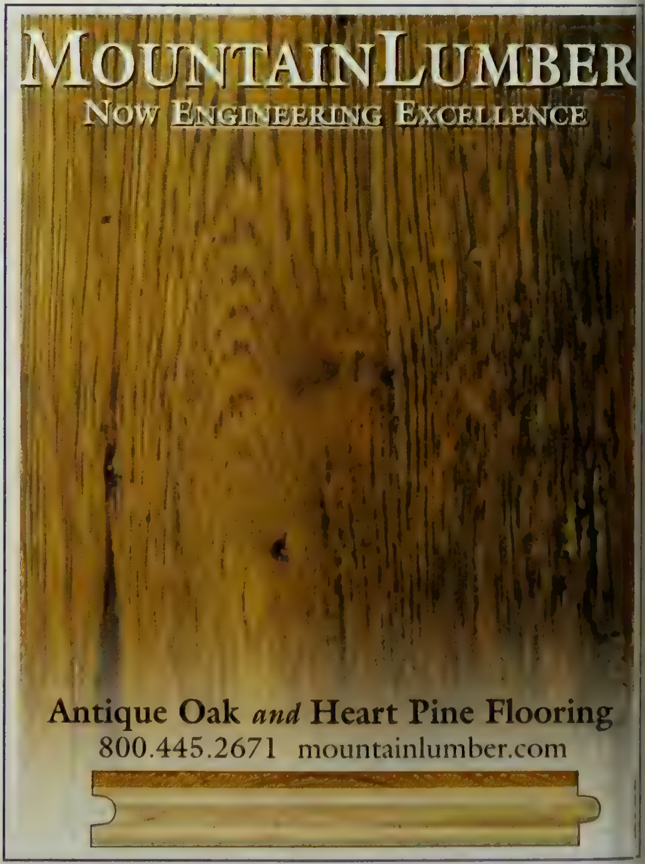
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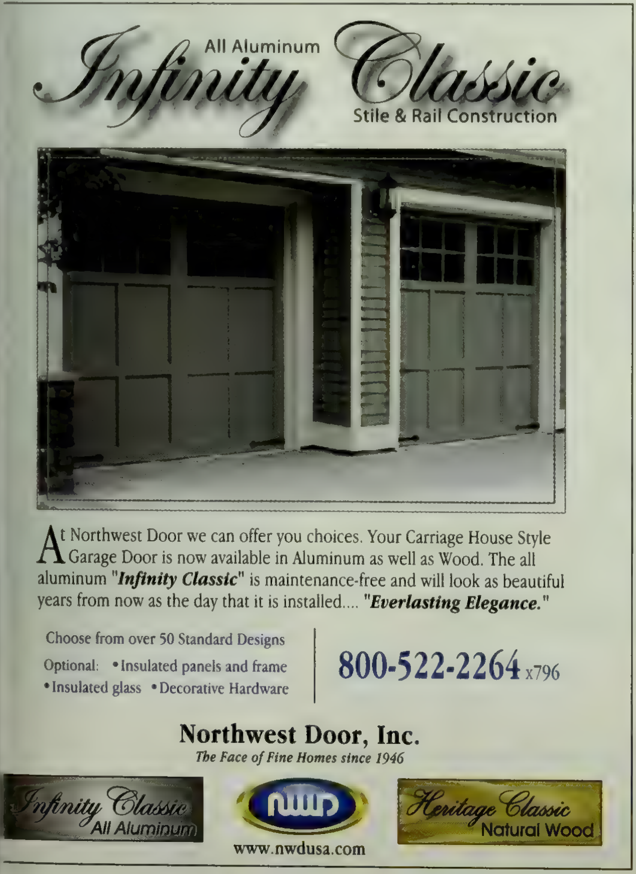

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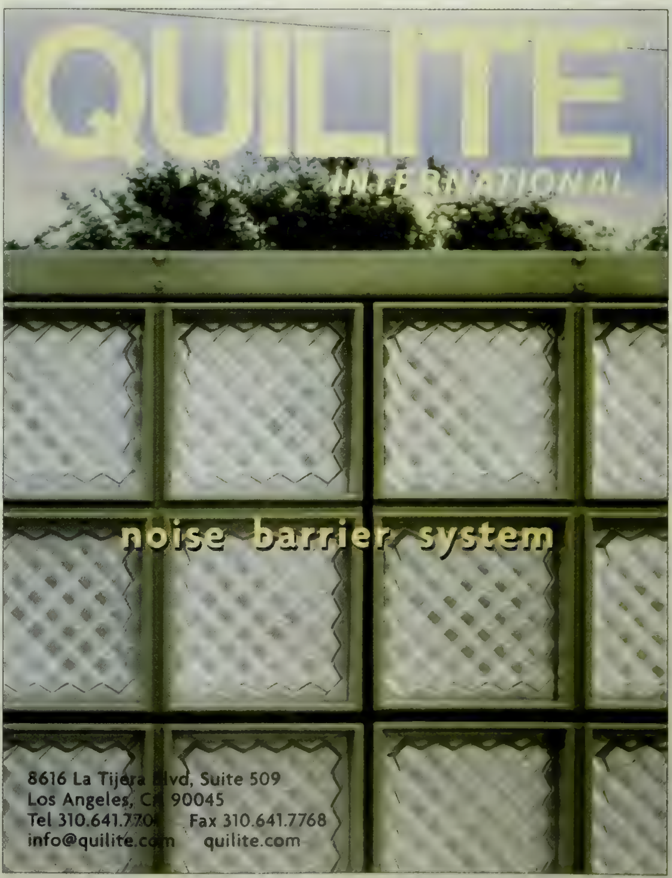

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CALL FOR ENTRIES

ARCHITECTURAL RECORD

Kitchen & Bath Portfolio

The editors of ARCHITECTURAL RECORD are calling for entries for the 2006 KITCHEN & BATH PORTFOLIO. Entry is open to any registered architect who has recently completed an innovative kitchen and/or bath project. Of interest are projects that feature unexpected materials, address unique client needs, or are designed in a manner that allows these utilitarian spaces to be both functional and beautiful.

There is no fee. Submissions should include images (color prints, large-format transparencies, or high-res digital images on CD along with a labeled color printout), a brief project description, and a complete credit and product source list. No slides or e-mailed submissions please. We must receive all materials by Friday, April 7th. Selected entries will be featured in RECORD's July 2006 issue.

Kitchen & Bath Portfolio

A kitchen "light box" and bathroom "lanterns" serve as beacons in a New York City loft

Submissions should be mailed to:
Rita Catinella Orrell
ARCHITECTURAL RECORD
Two Penn Plaza, Ninth Floor
New York, NY 10121

If you have any questions, please E-mail Rita Catinella Orrell at rita_catinella@mcgraw-hill.com

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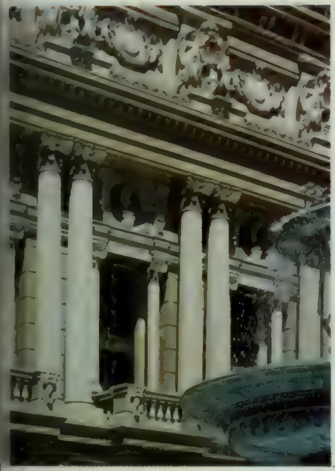

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers maintenance-free balustrade products ideal for any application.

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Petersen Aluminum Corporation now stocks Prestige Elite and Prestige Compact copper coated tiles and ZT Compact zinc-titanium coated tiles. Both the copper and zinc-titanium coated tiles are constructed of eight layers of different materials including impregnated fiberglass and natural bitumen. Both tiles age to a natural patina, are easy-to-install and provide a long, maintenance free life. For more information, call or visit their web site.

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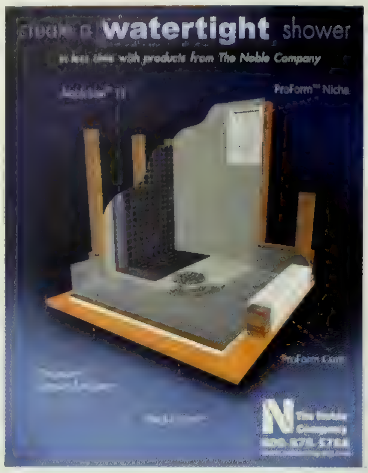

Save time and money and avoid leaks that can lead to the growth of mold. Use Noble Company's shower waterproofing products to help ensure a watertight installation. Products include sheet membranes, like Chloraloy® and NobleSeal® TS, ProForm™ Niches and Curbs, and PRO-SLOPE™, a composite that creates the required slope under the waterproofing membrane. Proven products with a history of success. For more information call or visit their web site.

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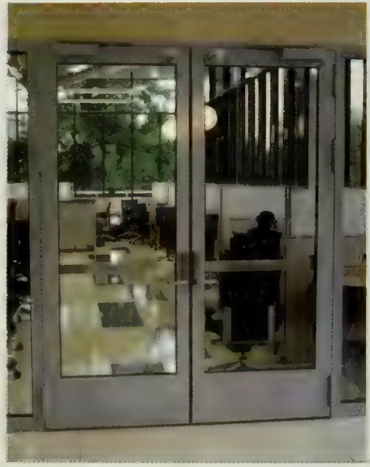

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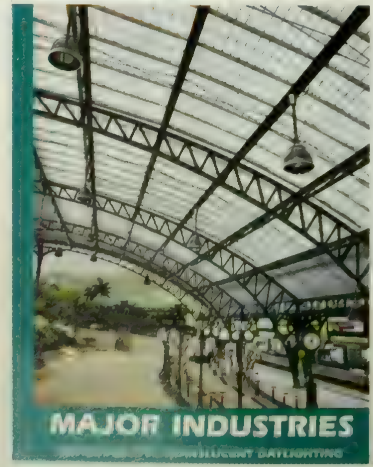

When your daylighting project demands something special, the TransCURVE™ translucent building panel system provides exceptional performance, with the added benefit of a striking, unique appearance. TransCURVE™ glazing panels feature a visually attractive aluminum grid core in several popular patterns, giving panels a refined look while maintaining exceptional strength. TransCURVE™ also features a premium architectural-grade FRP exterior skin that blocks damaging UV rays while transmitting the beauty of natural light.

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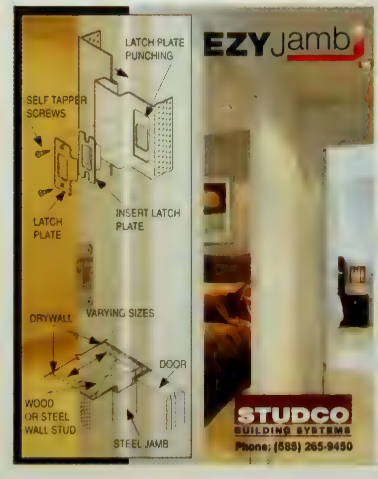
www.majorskylights.com

| Circle Reader Service #164

Trimless Doorframe

Studco Building Systems



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the installer's dream been realiz
but the architect's dream has start

585-265-9450

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JN-DOR-CO

These giant 14-ft.-tall Spanish Cedar panels with distressed wrought iron were designed by an architect and built by SUN-DOR-CO to add maximum elegance to an upscale restaurant. Six sets of these panels were incorporated into the building along with custom front-entry doors with the restaurant's logo etched into glass panels. This is just another example of SUN-DOR-CO's 50 years of expertise in building custom doors. You design it ... they'll build it. And, they'll do it in less than 60 days.

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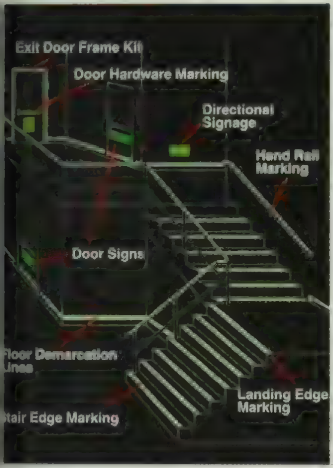

To help facilitate safe evacuations when power fails, the new ZERO system includes directional markings and door signage designed to show the outlines of egress paths on floors, stairs, handrails and obstacles. Using top-grade strontium pigments, the material is non-electric and non-toxic. The photoluminescent strips and signs feature aluminum backing with foam tape for superior adhesion to uneven surfaces and consistently outperform typical vinyl materials. The systems can be mechanically fastened if preferred.

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www.zerointernational.com

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ove View Mfg., By Tiles, Inc.

Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

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www.aboveview.com

| Circle Reader Service #170

Cast Metal Wall Surfacing Material

Gage Corporation, Intl.

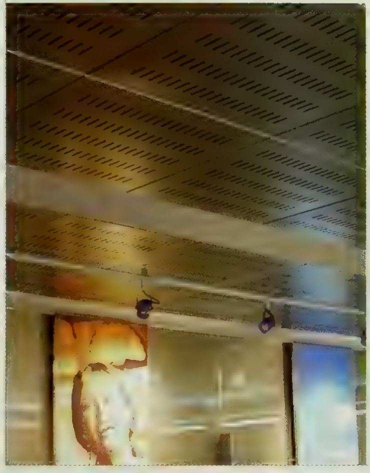
Gagecast® is a cast metal wall surfacing material suitable for a variety of interior architectural applications where patterns that feature high luster, relief, durability, and cost effective installation are a requirement. Twenty-eight designs are standard, however, custom collaboration is encouraged. Gagecast® is one component of Gage Vertical Surfacing. Contact the factory for product literature and selected samples.

800-786-4243
www.gageverticalsurfacing.com

| Circle Reader Service #171

Perforated Metal Ceilings

Gage Corporation, Intl.



Setting a new standard for perforated metal ceilings, Gage introduces the 700 Series of perforated metal ceilings manufactured from 50% recycled aluminum. Standard designs include five distinctive finishes and 14 different perforation patterns. Selective and custom designs are also available. Contact the Gage factory for literature and samples.

www.gageceilings.com

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Decorative Wall Panels

Kemlite Company

frpDesign Solutions is a family of decorative wall panels that provides an alternative to traditional wall coverings such as ceramic tile, wood paneling or vinyl wall coverings. Offering both functionality and design, products in the frpDesign Solutions line are made of a moisture-resistant frp panel with a decorative finish that includes myriad colors, patterns, and woodgrains, as well as a tile-look panel. Available with over 500 choices, frpDesign Solutions is easy to install and maintain. For more information, visit Kemlite on the web.

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www.frpdesignsolutions.com

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Pathways Architectural Solutions

Steelcase, Inc.

Pathways Architectural Solutions integrate architecture, furniture and technology to create better buildings and more effective workplaces. The portfolio includes moveable walls, access floors, modular power and cabling, and lighting solutions. A superior alternative to traditional construction that's simpler to build, easier to change, more environmentally responsible, and more cost-effective.

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www.steelcase.com

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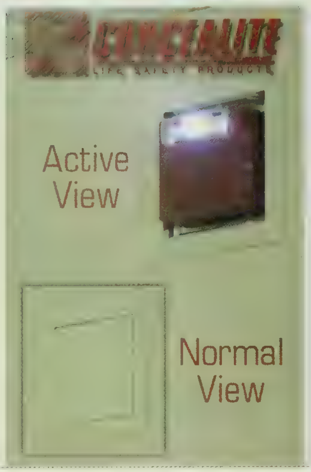
Concealite Life Safety Products



Tired of looking at fire strobes a
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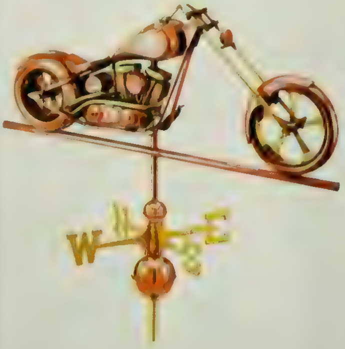

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this three dimensional (not flat sh
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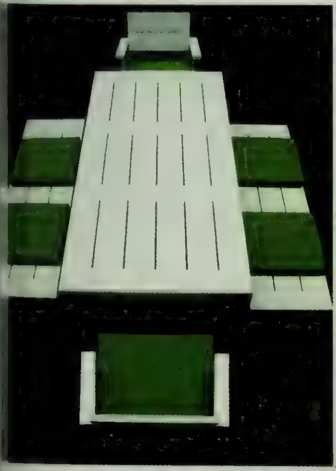


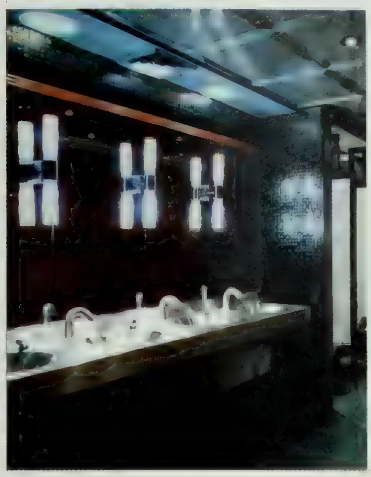
Modern Outdoor offers three complete lines of high-style, clean-lined environmentally conscious outdoor furniture. The Modern Outdoor Collections are commercial grade products designed for use in all manner of public spaces—restaurants, hospitality, parks, resorts, hotels—yet have an aesthetic that is perfect for a residential client's backyard setting. Their products now come in ipe or polyboard, stainless steel or powder-coated steel, and a natural composite material. They offer net pricing to qualified members of the trade. View the entire collection online.

818-785-0171
www.modernoutdoor.com

| Circle Reader Service #183

Stainless Steel Hand Washing Systems

Neo-Metro®



Continuity and unlimited wash station configurations make the System M2 Series a groundbreaking group washing system. Optionally equipped with sensors, soap dispensers, and a hot water heater tank, the unit offers additional attributes for a sleek and functional design for contemporary environments such as restaurants, hotel lobbies, office buildings, and club venues.

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High Performance Architectural Fluorescent Lighting

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Nevis is a unique new shape with planes, angles and flowing lines that taper exquisitely into a superbly narrow edge. Multiple lamp, housing and shielding selections provide aesthetic and performance versatility. For low ceiling applications, Nevis Plus Liso delivers excellent ceiling uniformity when mounted 12-in. from the bottom of the housing.

509-924-7000
www.aleralighting.com

| Circle Reader Service #185

Lighting

Columbia Lighting

Columbia Lighting introduces the Zero Plenum Troffer. At 1-1/2-in. deep, it is no deeper than standard T-Bar, and does not intrude into the usable plenum. The unique telescoping housing simplifies installation, providing aesthetics and performance in the tightest of spaces.

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www.columbialighting.com

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Custom Light Fixtures

CPLIGHTING

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Handrail Design Inc.

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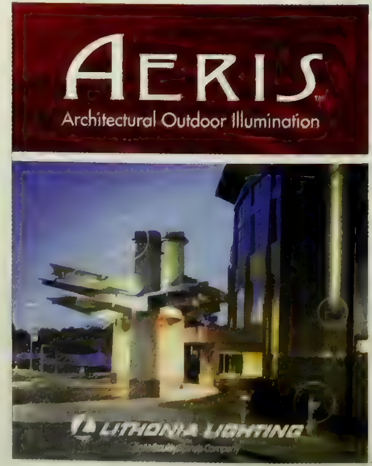
Complete Outdoor Lighting Solution

Lithonia Lighting



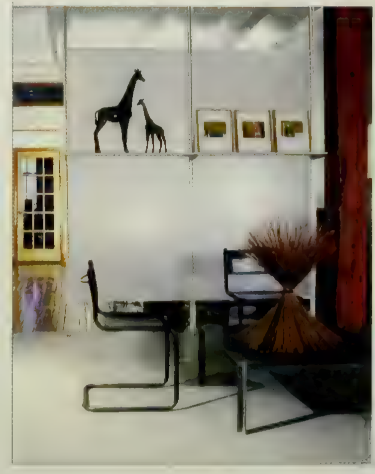
Lithonia Lighting Outdoor products are as versatile as they are reliable, and with the Aeris Architectural Outdoor family, innovative and inspirational designs create a complete outdoor lighting solution. Lithonia's products include: area and roadway luminaires; wall mounted luminaires; flood luminaires; and bollards.

800-279-8041
www.lithonia.com/aeris

| Circle Reader Service #189

Compression Support Pole

Rangine Corporation / Rakks



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pole. Shown here with Rakks sh
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can accommodate floor to ceili
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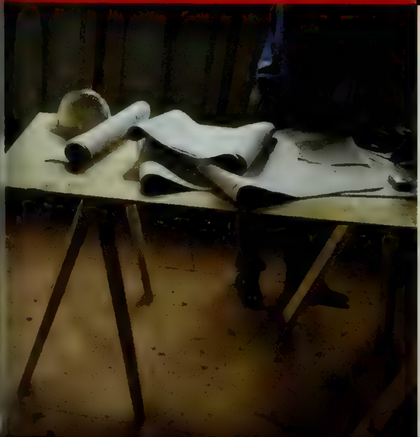

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Washington
University in St. Louis

Dean of Architecture

Sam Fox School of Design & Visual Arts

Washington University in St. Louis is seeking to fill the position of Dean of Architecture in its Sam Fox School of Design & Visual Arts. The appointment begins July 1, 2006. The successful candidate must be an accomplished leader in architecture. The Dean of Architecture will be a tenured full professor in Architecture and will report to the Dean of the Fox School. The Fox School, to be formally inaugurated July 2006, includes the College of Art, College of Architecture, Graduate School of Art and Graduate School of Architecture & Urban Design as well as the Mildred Lane Kemper Art Museum. The University is in the midst of completing two major new buildings for the School, designed by Fumihiko Maki. The College of Architecture is composed of about 50 faculty, 200 undergraduates and 160 graduate students and offers international semesters in Barcelona, Spain; Buenos Aires, Argentina; Florence, Italy; Helsinki, Finland; and Tokyo, Japan.

The successful candidate will be responsible for recruiting and evaluating faculty, overseeing the educational programs, and developing scholarly initiatives. The Dean of Architecture will be part of a collaborative team of academic leaders within the Fox School, engaging other parts of the University and working with community professionals. Knowing that women and members of minority groups are underrepresented in the profession of architecture, candidates from these groups are especially encouraged to apply, and the successful candidate must be committed to strengthening diversity and improving gender balance of the faculty and administration.

Nominations and expressions of interest may be submitted to the Chair of the Advisory Committee for the Appointment of the Dean of Architecture: **William A. Peck, M.D, Campus Box 1133, Washington University in St. Louis, St. Louis, Missouri 63130; e-mail: peckw@wustl.edu**

Washington University in St. Louis is an equal opportunity, affirmative action institution and encourages applications from and nominations of women and minority candidates.

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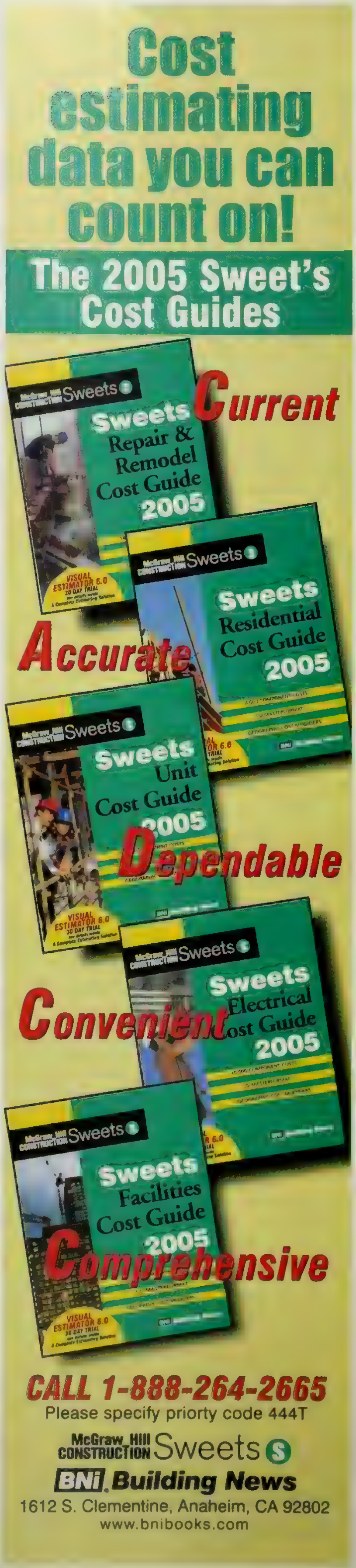
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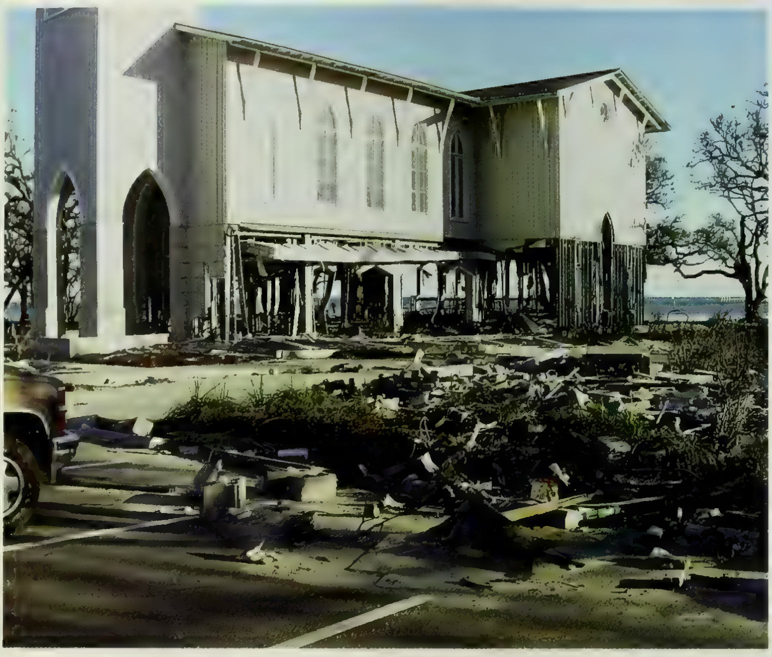

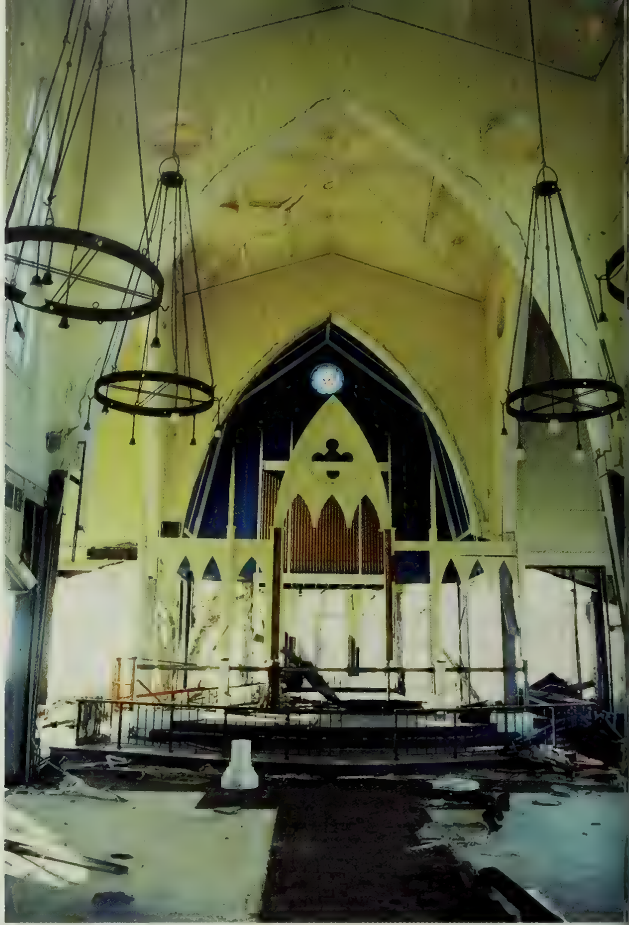

Can Gulfport's St. Peter's by the Sea be rebuilt?

The five-year-old church, designed in a simple Carpenter Gothic style by the New Orleans firm Erroll Barron/Michael Toups (above), was featured in RECORD in 2001 (below). Hurricane Katrina caused severe damage to the first-floor sanctuary (above right). Now the congregation wonders whether or not to relocate.

Architect Erroll Barron, FAIA, took heed of hurricane winds when he designed St. Peter's by the Sea in Gulfport, Mississippi. At 17 feet above sea level, it was supposed to be safe from floods like the one propelled by Hurricane Camille in 1969 that inundated this Episcopal parish's previous home. No one counted on Hurricane Katrina's 30-foot wave of water, however. It slashed quite cleanly through the lower story of the five-year-old church, carrying the pews and a hefty electric organ three blocks north to a railroad berm. The upper level is intact, but the adjacent parish house has vanished, as well as every other structure on this once-residential block. The mature live oaks, however, have already leafed out again.

Doug Singletary, who chaired the building committee when the building was designed, explained that the extensive debris still visible on a January visit had to remain until an insurance payout was resolved. With the Gulf glittering benignly beyond the trees, the appeal of the site and the congregation's attachment to it was understandable, in spite of the mess. "We've been St. Peter's by the Sea since 1901," he explained. The congregation at press time had not decided whether to risk rebuilding on the same site. "We have a hard time even thinking about leaving because the church itself was such a spiritual place," he added.

He is among those who argues that the magnitude of the storm surge is unlikely to be duplicated. The structural frame of the church is unharmed, and moving upland would mean, he says, "walking away from $500,000 worth of improvements." *James S. Russell*

St. Peter's by the Sea
Gulfport, Mississippi

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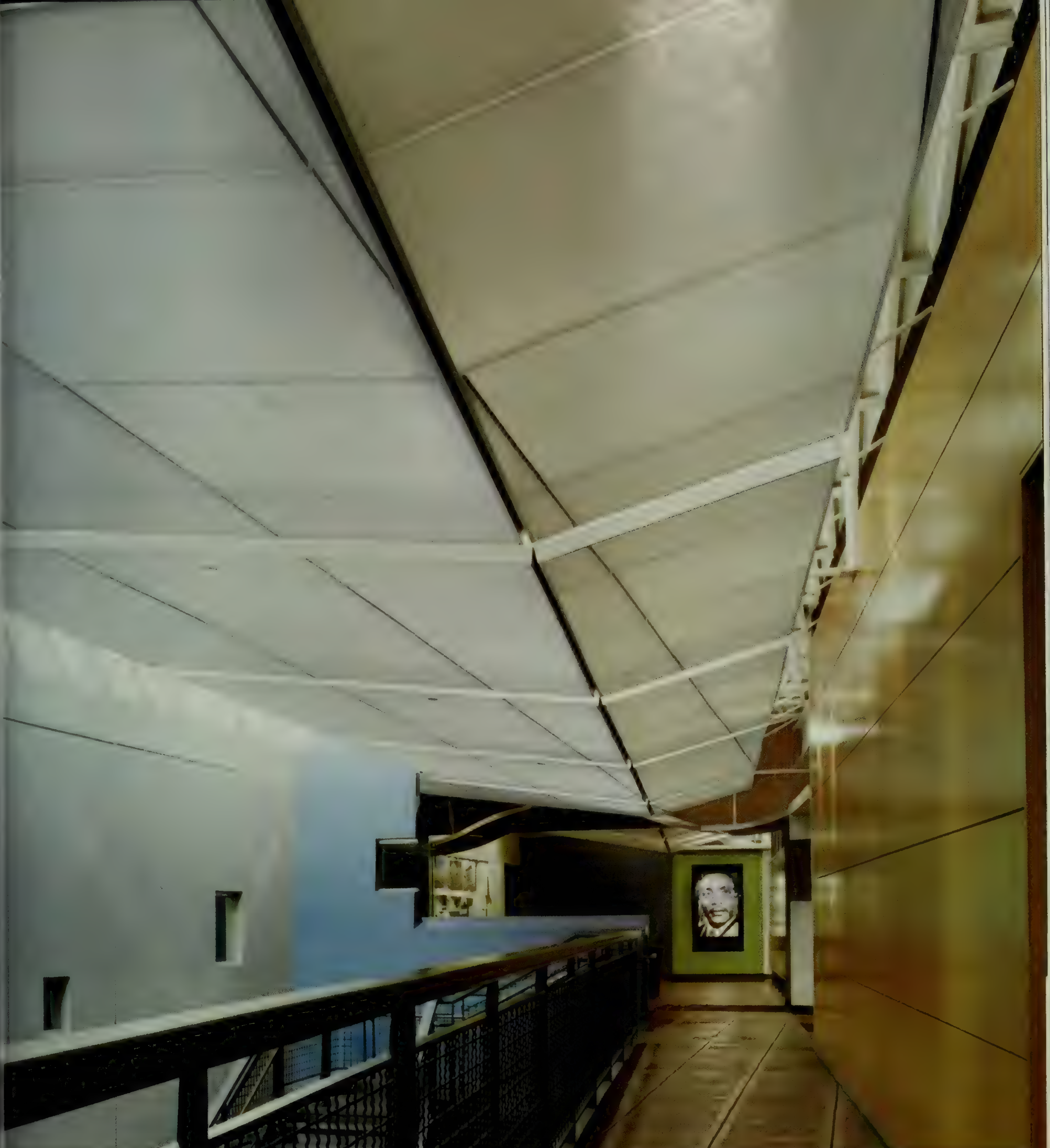

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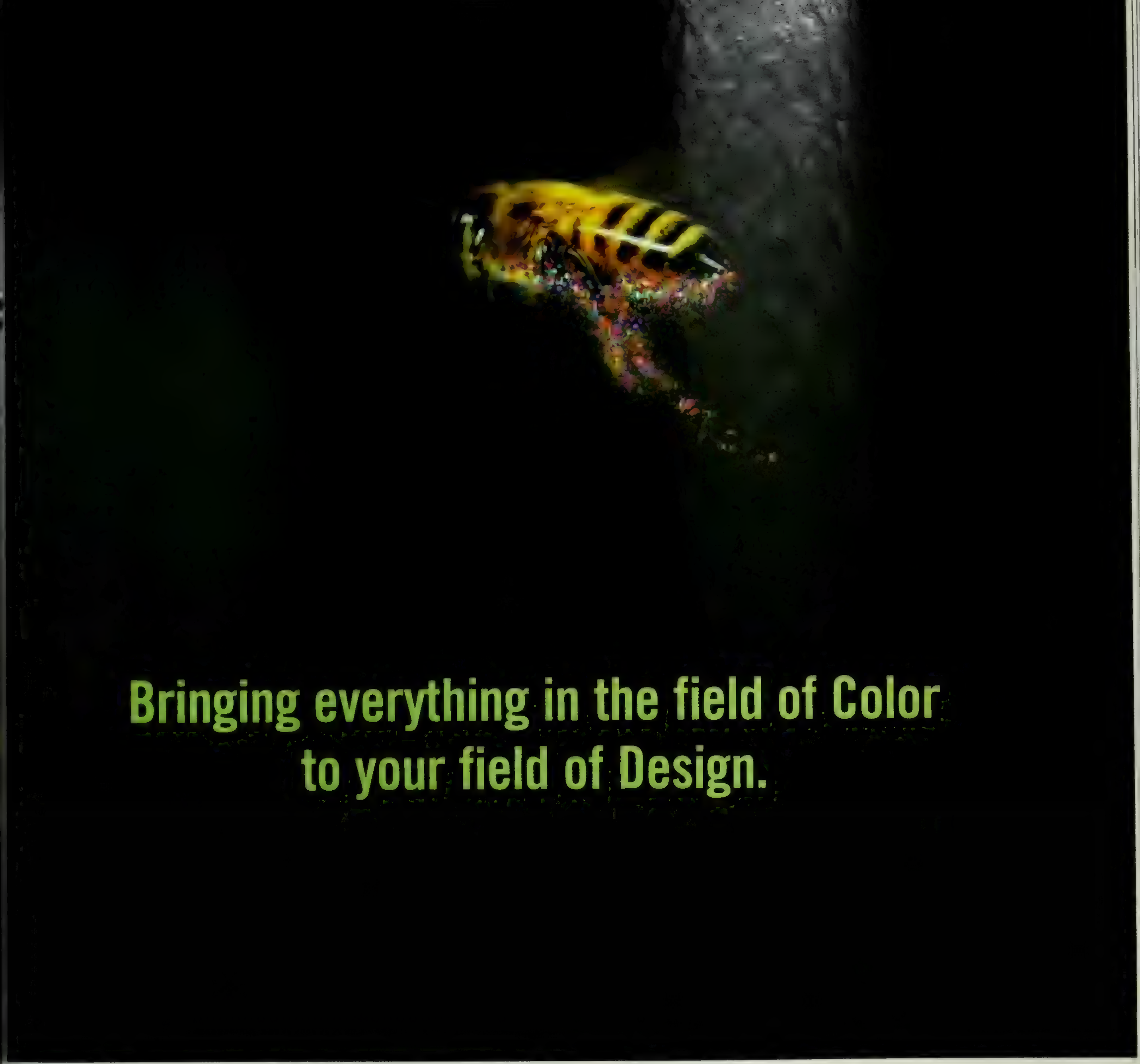

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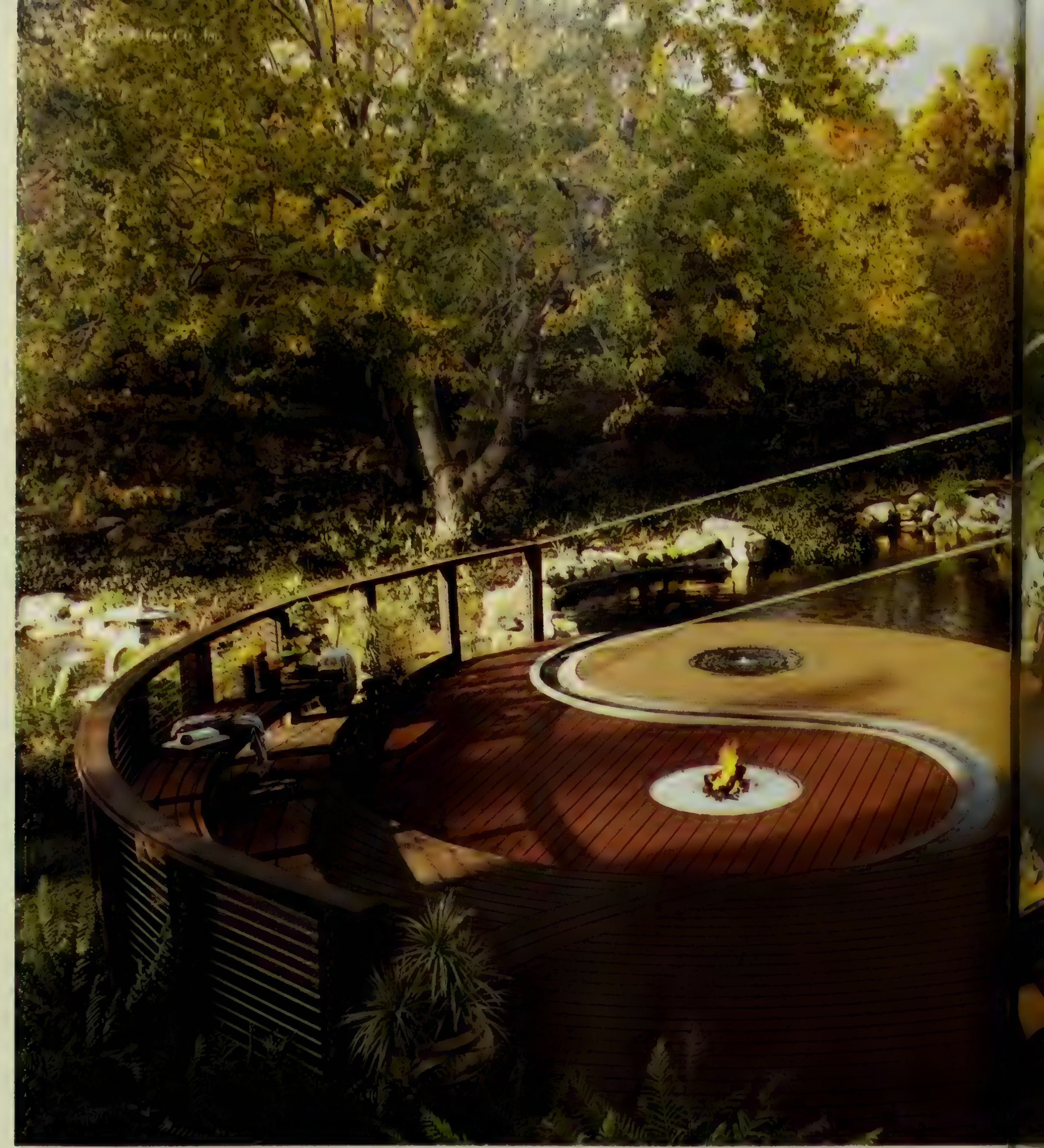

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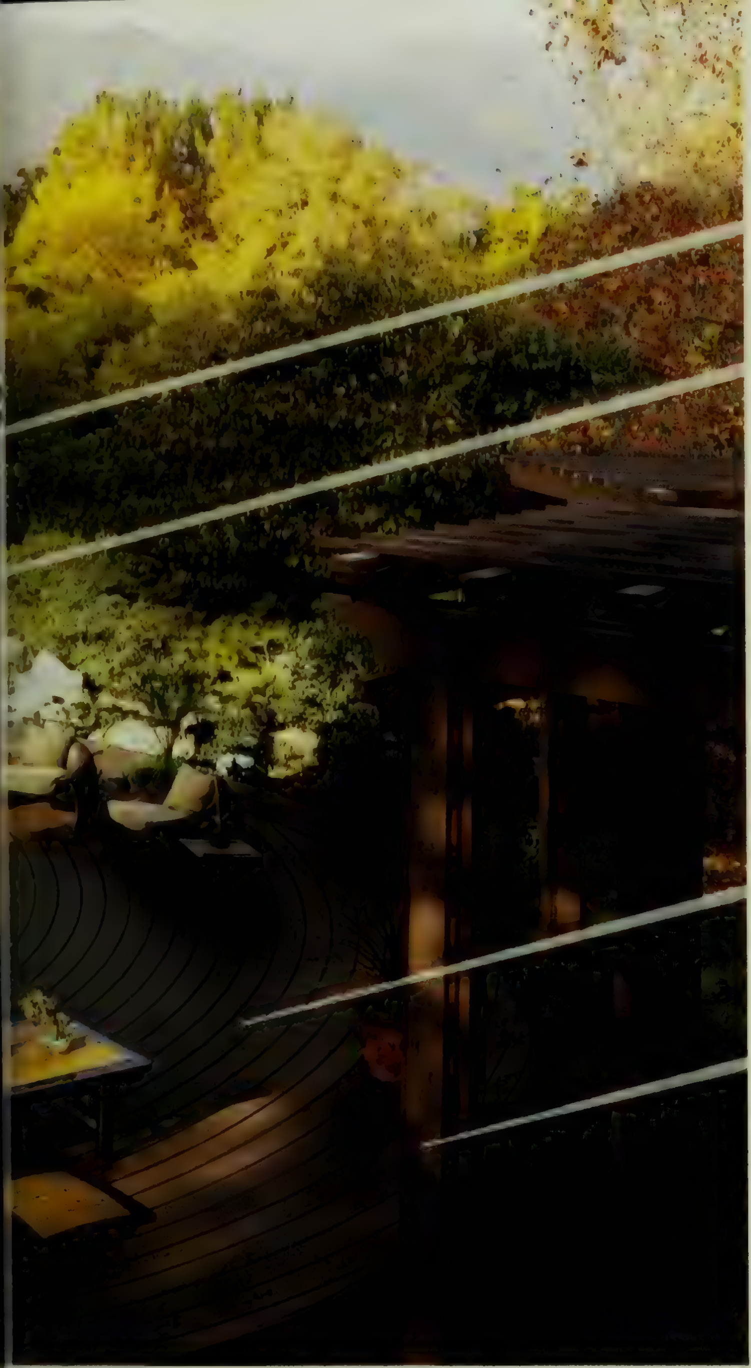

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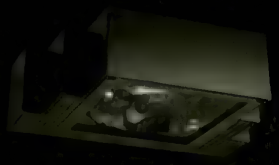

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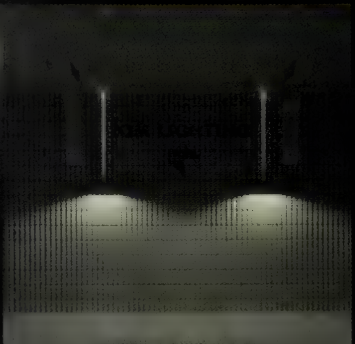

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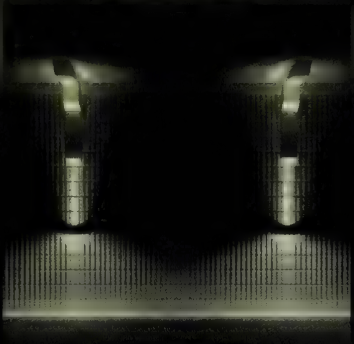

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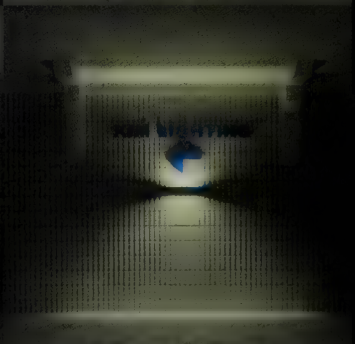

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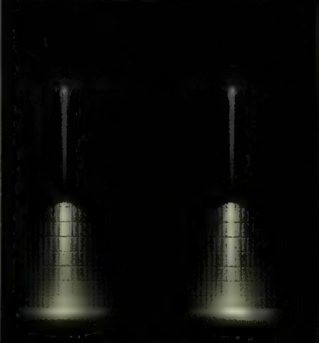

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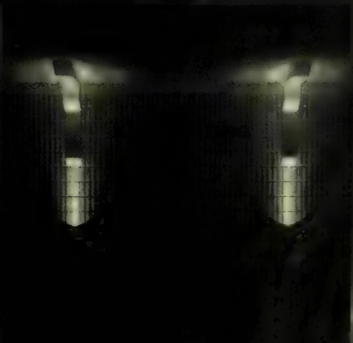

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Lightning Strike

Editorial

By Robert Ivy, FAIA

The conversation with my fellow traveler was breezing along as two frequent fliers compared notes on the American home. Here we were, separated by geography (north/south), work (public versus private ctor), yet experiences with our own houses bore striking similarities, including e removal of trees recently downed in harsh weather. Where, we speculated, d nature present only a constant, benign face? The answer: England! Then ith one sentence, the universe shifted. "Of course, I would never live there," he served. "They don't allow handguns, and I couldn't protect my home."

Like a lightning strike, his observation divided us: We clearly saw the rld in distinctly different ways. He sallied into the need for protection of arth and family in a troubled world, describing how his own house lay stled in four defensible acres of trees; I, by contrast, lived in Jane Jacobs land rit large, an urban oasis of brownstones and pruned street trees rendered fensible by congregate living. What particularly struck me, on reflection, was w I had managed to proceed through a lifetime of architectural involvement far removed from the worldview articulated by the armed homeowner.

Architects often accept the pieties we have been taught, the lessons at we absorb and discuss, as larger truth. If only the rest of the country would nply wake up and stop sprawl. Plan better cities. Preserve open spaces. Build ore environmentally responsible structures. Any fool (read, the public) can see w self-interest is despoiling the land; developers, greed, and blithe unconcern homeowners form an unholy trinity, from this shared perspective, fed by low terest rates and tax laws that encourage the building of the single-family me. While we architects are quick to know the better answer, we might take ne to understand the motivation of the people we hope to convince. How well we actually understand, for instance, the American need for autonomy? learly, the homebuilding boom of recent years reflects deep-seated desires. tter understanding of the motives leading to the suburbanization of America n allow us to acknowledge and address, if not agree with, the results. An formed architecture, and planning, can only improve our design.

The need forcefully articulated by my fellow traveler was for secu- ty. His position, while extreme to these New York ears and smacking of a lichael Moore parody, historically extends to the founding of the United ates, when individual settlers faced the perils of an expansive wilderness and ultimately forged the democratic system we currently enjoy. The philosophical underpinnings that place the citizen at the helm of his or her own destiny stretched throughout the nineteenth century to include a litany of virtues encapsulated in the title of Emerson's well-known essay "Self-Reliance." Wright and other architects mixed morality with design, with repercussions that extend into this new century.

Today, the currents of global change and the challenges to domestic order are creating undercurrents of fear that erupt in unexpected places. Movies such as Safe Room *and* Hostage, *which serve as a sort of dreamlike id to our more rational daytime lives, portray the American house as a fortress, assaulted by crime, powerless in the face of inept authorities. In the case of those imaginary tales, neither the architect-designed houses out in the landscape nor those in the city, protected by electronic systems, fortified by vaults and television cameras, could save the protagonist. The individual homeowner, and heroic strangers, are the best defense.*

Architects are sometimes accused of being out of touch with widespread needs, including security. In this issue, Record Houses again reflects the deep-seated desire for dwellings with a symbiotic relationship to the out of doors that is transparent and in harmony with nature. At the same time, the eight residences presented in these pages and on the Web will never address all of the fundamental questions accompanying our overarching desire to live within the countryside. The traveler might ask, can these remote, leafy bowers offer a sense of security on dark New England nights? What neighbor might you call if the lights went out? Architects are rarely motivated by fear. Ensconced as we are in lofts, or within the hum of the urban village, an unexpected conversation with a stranger suggests that we ponder the qualities of the ideal home and whether we architects are in touch with our clients. While I'll not soon change my own position on the role of firearms as the best source of security, nevertheless I wonder, how well do we know what clients really want?

Robert Ivy

Letters

Tradition on location

The Red Location Museum designed by Noero Wolff Architects in New Brighton, South Africa [Record, March 2006, page 99], is a good example of incorporating traditions in a structure. It was refreshing to read that local building materials and labor were implemented. The corrugated-iron sheeting and concrete block give the structure an earthy feeling and fits in with the environment. The concept of "memory boxes" helps define the era of apartheid. It is impressive that the architects took the time to include the residents and their customs in the overall scheme.

The end of apartheid, however, has by no means erased racism. Hopefully, buildings such as The Red Location Museum will raise awareness for future generations about the effects of racism. It is ironic that the residents of New Brighton were forbidden in the past to visit cultural institutions unless as employees, and now this museum has been built in their own backyard—dedicated to each and every South African.

—Adrienne Batson-Cooper, APA, Assoc. AIA
Brooklyn

A real rebuilding plan

Sorkin's February Critique on the Congress for the New Urbanism's (CNU) work for the Mississippi Gulf coast didn't quite go far enough [page 47]. The CNU espouses "higher density" building and "smart growth," yet is effectively down-zoning some of the cities that have adopted their zoning philosophies. The CNU Charter states that neighborhoods should have densities of "8, 10, even 50 units/acre." "New" urbanism must encompass people who live at densities of 100, 200, even 300 units/acre and must, at the least, make an effort to promote zero or low-energy cities.

The CNU is trapped by the "formula," controlling every element down to the minute detail. "New Urbanism" should include what writer and activist Jane Jacobs calls "the strange": unpredictable uses and peculiar scenes that are essential to flourishing urban places. The trick is how to ensure "the strange" in zoning theory. It may be not to "fix" everything, but to leave a variable allowing unpredictable differences to occur. The CNU charter rejects "placeless sprawl," yet advocates sameness in the neo-traditional, "seamless" architecture that somehow always requires a porch, regardless of context. Porches are good in some places, not good in others. Real neighborhoods develop over time, are diverse, and cannot be replicated.

Plans for the rebuilding and planning of the Gulf Coast must include real diversity, real densities, and real sustainability, currently lacking in the CNU dogma.

—Angie Brooks
Pugh + Scarpa
Santa Monica

The state of criticism

Globalization and the Web are not, as Nancy Levinson maintains in her March 2006 Critique [page 63],

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entirely responsible for the shallowness of contemporary architectural criticism. The best critics of the third quarter of the 20th century operated from a personal conviction about the rightness and beauty of well-crafted buildings. Allan Temko envisioned a technological architecture and cityscape, while Peter Blake lovingly wrote about the moral authority of Modernism (especially Le Corbusier's) while acknowledging its limitations. Criticism's miasma today is primarily due to the absence of the critics' moral conviction about design, not the bewildering array of ideas and forms now found on the Internet.

—James A. Gresham, FAIA
Tucson

Lost spirit

I was disheartened to read the feature on the Rural Studio after Samuel Mockbee [March 2006, page 76]. On the one hand, it is great to see the work continue after Mockbee's death. On the other hand, the design language has dramatically been altered.

I applaud Andrew Freear's continued efforts to follow in Mockbee's larger-than-life shoes and his success in mainstreaming the studio work. However, stating the opinion that the architect was perceived as a person who "the locals all thought was loony" seems inappropriate and disrespectful to the studio's founder.

Architecturally, there has been a shift from a study of vernacular form to a refined universalistic architecture that is mainstream Modern. In the article, Andrea Oppenheimer Dean describes the work since Mockbee's departure as "sophisticated" compared to the earlier work—yet the new work appears to lack the spirit of context and place that he and his students so assuredly conveyed in the architecture.

—Doug Sonsalla
West Fairlee, Vt.

Risk assessment

The interview with Supreme Court Justice Stephen Breyer ["The Importance of Openness in an Era of Security," January 2006, page 80] was interesting for a number of reasons. It is exciting to hear a client describe how one can feel one's spirit rise upon walking into a well-designed building. And I share Breyer's views on risk assessment when he states: "Not all risks can be avoided. There are many tiny risks that are not worth eliminating. You cannot cure tiny risks at a large cost or the country will soon be bankrupt." However, I am not sure I am with him when he opines that architects should try to be involved with making security decisions. It's not that I disagree with his position—I'm just not certain that my insurance will cover the risk.

—Tom Usher, AIA
Kansas City, Mo.

Making landmarks

It was a great pleasure reading the Archrecord2 piece "Thom Faulders: Finding Depth in Surfaces" [February 2006, page 43]. It is a special delight to read about innovative designers who integrate thoughtful concepts with sophisticated technology and make efficient and artistic structures. When such designs become finished structures, they create environmental landmarks that are a pleasure to admire and inhabit. Faulders's AirSpace multifamily housing unit in Tokyo will certainly join this league.

—Stefanie Leontiadis
Enfield, Conn.

Corrections

In a March News Brief about Daniel Libeskind working in Gulfport, Mississippi [page 32], a reference to the town Unawatuna, in Sri Lanka, was misspelled as Atawatuna.

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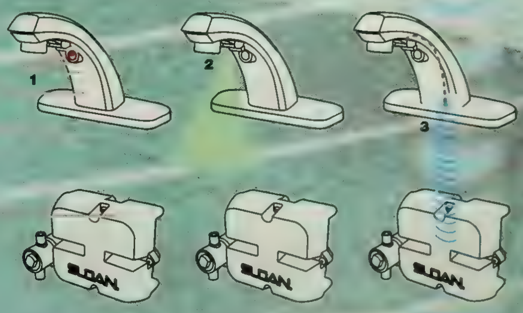

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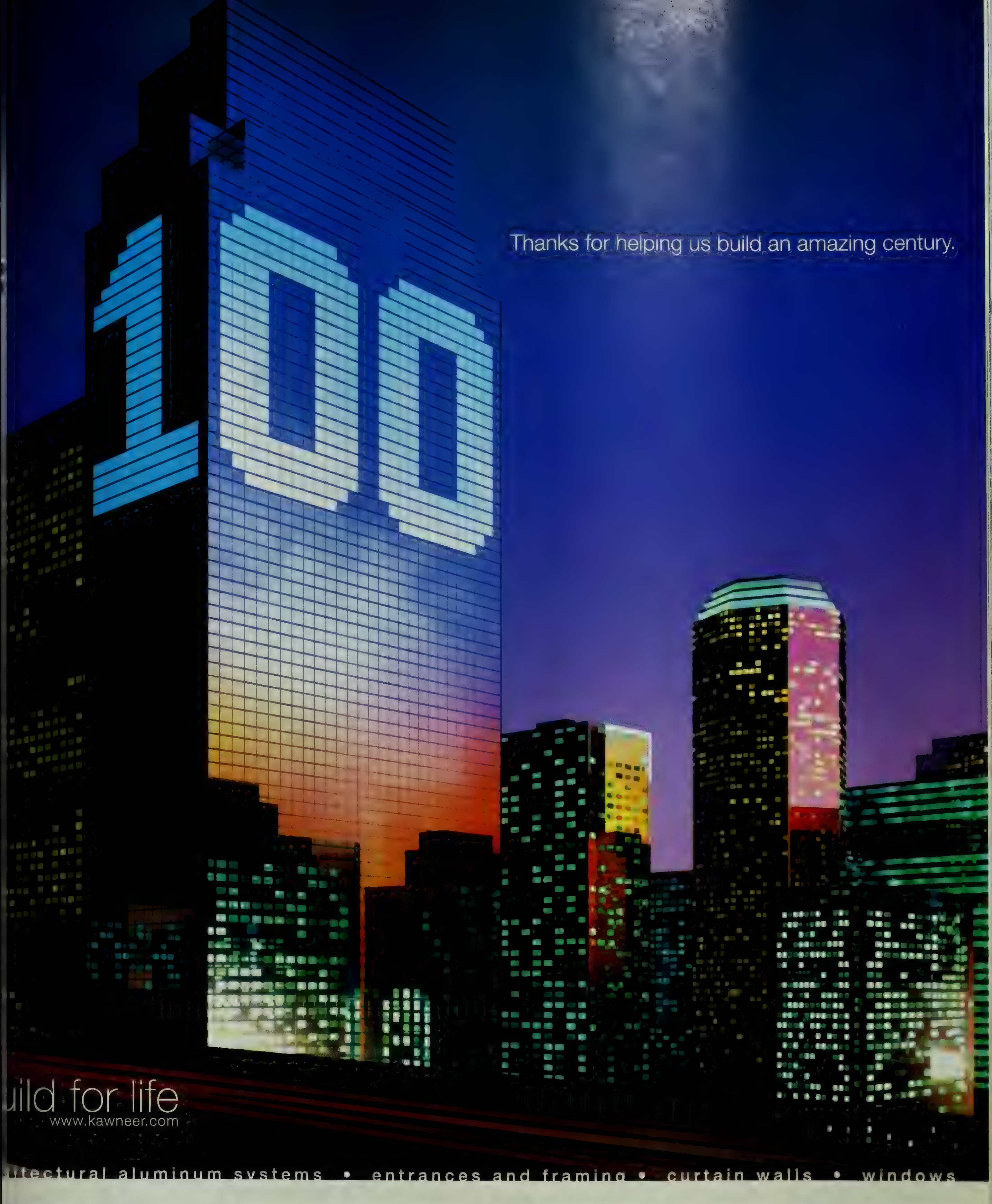
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Record News

Highlights

p.34 **Gulf Coast rebuilding update**
p.38 **Gehry designing first Las Vegas project**
p.43 **Calatrava's Dallas Bridge soon under way**
p.44 **Rudolph's Riverview High threatened**

espite controversy, Rogers will keep Javits commission

early March, British architect chard Rogers's recently released esign for the expansion of the Jacob Javits Convention Center in New rk was still receiving positive views. But it was quickly overshadved by a firestorm over the hosting a meeting of a group called chitects and Planners for Justice in alestine (APJP) in Rogers's office on ebruary 2. The group, which includes harles Jencks, Michael Sorkin, ogers's partner Abe Hayeem, and hers, is considering a boycott of ntractors and suppliers working the security wall and settlements Israel's occupied territories. APJP ay also call for Israeli architects to expelled from the International nion of Architects. The boycott would similar to one imposed on South rica during Apartheid.

An interior rendering of the Javits.

Though similar boycotts, such as one against Israeli academics, have already been initiated in Europe, the position is seen as radical in New York. New York Assembly Speaker Sheldon Silver, following a series of articles in *The New York Sun*, called for Rogers to be dropped from the Javits project, and possibly from the redevelopment of Manhattan's East River riverfront and the expansion of Silvercup Studios in Queens (story below). In letters sent to New York Governor George Pataki and Empire State Development Corporation (ESDC) chairman Charles Gargano, Silver underscored the late Senator Javits's support of Israel and claimed Rogers's association with the project "undermines the deep-rooted friendship and strong economic partnership between New York and Israel." State Comptroller Alan Hevesi was also sharply critical of Rogers.

In a statement released on March 6, Rogers quickly dissociated himself from the group, saying, "I am not a member of Architects and Planners for Justice in Palestine, nor have I ever been.... I abhor boycotts of any kind—of Israel or any other place. It is not a way to achieve peace, and I will not be party to any group or movement that advocates a boycott." The statement appeared to satisfy ESDC's Gargano, who, in a statement dated March 9, told Rogers, "Now it's time to get back to work."

Some prominent architects like Daniel Libeskind have backed Rogers, while others, such as Moshe Safdie, have expressed concern. The Anti-Defamation League (ADL), however, was satisfied with Rogers's clarification of his relationship with APJP. "You don't protest a boycott by initiating another boycott," says Abraham H Foxman, national policy director for the ADL. "Architects should build!" he says. "We should move on." *Alan G. Brake*

ilvercup Studios towers would revive Queens skyline

ew York City's borough of Queens n't known for cutting-edge architecre. But its lackluster skyline is now cing a dramatic transformation ith a $1 billion, mixed-use development designed by Richard Rogers for e Queens-based television and m production company Silvercup udios. Plans call for two residential wers, approximately 600 and 500 et tall, as well as a 526-foot-tall mmercial building. The new buildgs are to be constructed along the ast River on a 6-acre site next to e Queensborough Bridge. The 2.2-illion-square-foot project includes 000 units of residential housing, fice and retail space, a riverfront splanade, and a cultural facility, ong with eight new soundstages.

The design of the Silvercup tudios towers, with their distinctive exoskeletons and exposed diagonal cross bracing, reflects Rogers's penchant for displaying buildings' structural and mechanical systems. Silvercup Studios' president, Stuart Suna, who trained as an architect, says that the development's design is partially inspired by the structure of the Queensborough Bridge itself, which is reflected on the buildings' bracing and proportions. The manner in which the massing of the three towers slopes down complements the bridge's catenary curves, he says. The Silvercup project also includes the restoration of the landmark 1892 New York Architectural Terra Cotta Company building, situated on the site.

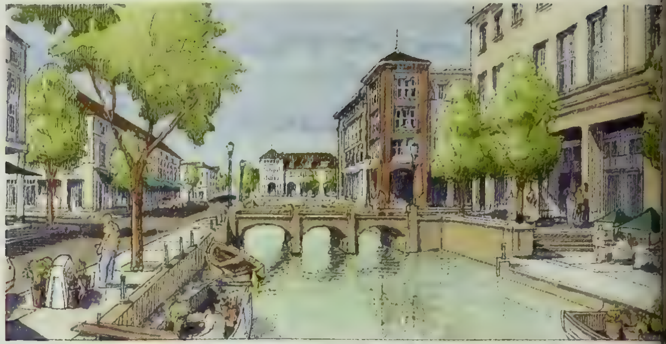
Silvercup Studios' chief executive, Alan Suna, who co-owns the facility with his brother Stuart, says that the recent controversy over Rogers's reported association with the U.K.-based group Architects and Planners for Justice in Palestine (story above) shouldn't impact the architects' involvement with the Queens project.

The new development will be located six blocks west of Silvercup Studios' main production complex, which is the largest full-service film and television production facility in the Northeast. Stuart Suna says that his intention is to create a 24-hour-a-day live, work, and leisure facility similar to the Time Warner Center in Manhattan.

The studio expansion is coming at a time when New York City's film and television industry is burgeoning, thanks in part to new city and state tax credits and other financial incentives. More than 250 films were shot in New York in 2005, compared to 202 in 2004, and the number of location shooting days in the city rose 35 percent. Currently, the city's production industry employs 100,000 New Yorkers and contributes $5 billion to the local economy. *Alex Ulam*

A rendering of the Silvercup towers.

SPECIAL HURRICANE REPORT

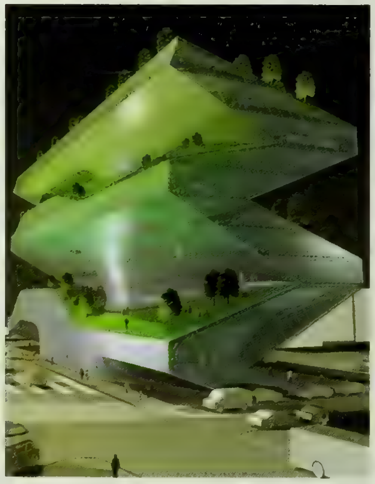


A rendering from a DPZ charrette in Lake Charles, Louisiana, envisioned a canal, and traditional architecture, near the town's Ryan Street.

Louisiana planning begins; designers in region express sharp divisions

While New Orleans's redevelopment plans have seized the spotlight in Louisiana, Governor Kathleen Blanco and her 26-member Louisiana Recovery Authority (LRA) have named their own "dream team" of state planners, which started work in February. The team includes Calthorpe Associates, Urban Design Associates (UDA), and Duany Plater-Zyberk (DPZ).

DPZ, known for promoting mostly traditional New Urbanist planning, also led a major charrette in Mississippi last fall. The firm is leading design charrettes in towns and parishes throughout the state, helping them create model development plans. UDA, with information from those charrettes, will assemble "pattern books," featuring architectural designs that can be used by homeowners and businesses as they rebuild. Calthorpe is helping develop a regional-planning vision. Regional plans are expected to be completed by the end of the year.



UN Studio's zigzagging community hub, at a New Orleans-themed show in Rotterdam.

Four of DPZ's weeklong charrettes were held in February, and another began on March 7 in Arabi, outside of New Orleans. Designers and residents shared ideas, sketched, and even drew up resolutions, forming plans that Adrés Duany says have already been formally adopted by some municipalities.

Participants proposed creating walkable neighborhoods, ensuring housing diversity, maintaining "community character" (including antebellum and Victorian architecture), conserving open land, and using "smart codes," which unify zoning, design standards, road types, and other elements. Outside design, charrette members advised forming community development corporations to buy land for redevelopment, creating new industries, and even moving most residents in one town, Erath, to higher ground.

Some critics have complained about the participation of the Congress for New Urbanism (CNU), which Duany helped found, in both Mississippi and Louisiana. In RECORD's March issue, critic Michael Sorkin called the CNU's methods "undemocratic," and labeled the group's historicist style "smiley-face architecture." Duany commented that such critiques are often based on lack of understanding. "It's a caricature. They still say New Urbanism is about picket fences," says Duany, who says he proposed some Modern-styled houses at one of the recent charrettes, albeit to a poor response.

A different plan for New Orleans

New Orleans Mayor C. Ray Nagin's Bring New Orleans Back Commission's (BNOBC) building committee issued its first planning report in January [RECORD, February 2006, page 26] after a lengthy investigation by Philadelphia-based architects and planners Wallace Roberts & Todd (WRT). The plan, still in development, incorporated environmental assessments of the region and pointed out prime rebuilding opportunities. Lacking rigid design guidelines, the report focused on a "neighborhood-center model" organized around central green spaces and main streets. The BNOBC will conduct subsequent planning workshops in several New Orleans neighborhoods.

Because its promised FEMA funding recently fell through, the BNOBC planning effort is now being funded largely by the LRA and its nonprofit LRA Support Organization. But BNOBC's Reed Kroloff insists that the state's planning team will not play a role in New Orleans, despite Duany's expressed desire to take part. "We have a plan here that will work. We don't need anybody else coming in to be a part of it," he says. Kroloff says he agrees with many CNU planning ideas, like walkable downtowns and public transportation. But he dislikes the CNU's pattern books, which he says are too proscribed, and too often reference the past. "We can learn from the past to create a new vernacular. New Orleans has done that all along," he says.

Vanguard schemes reveal more divergence

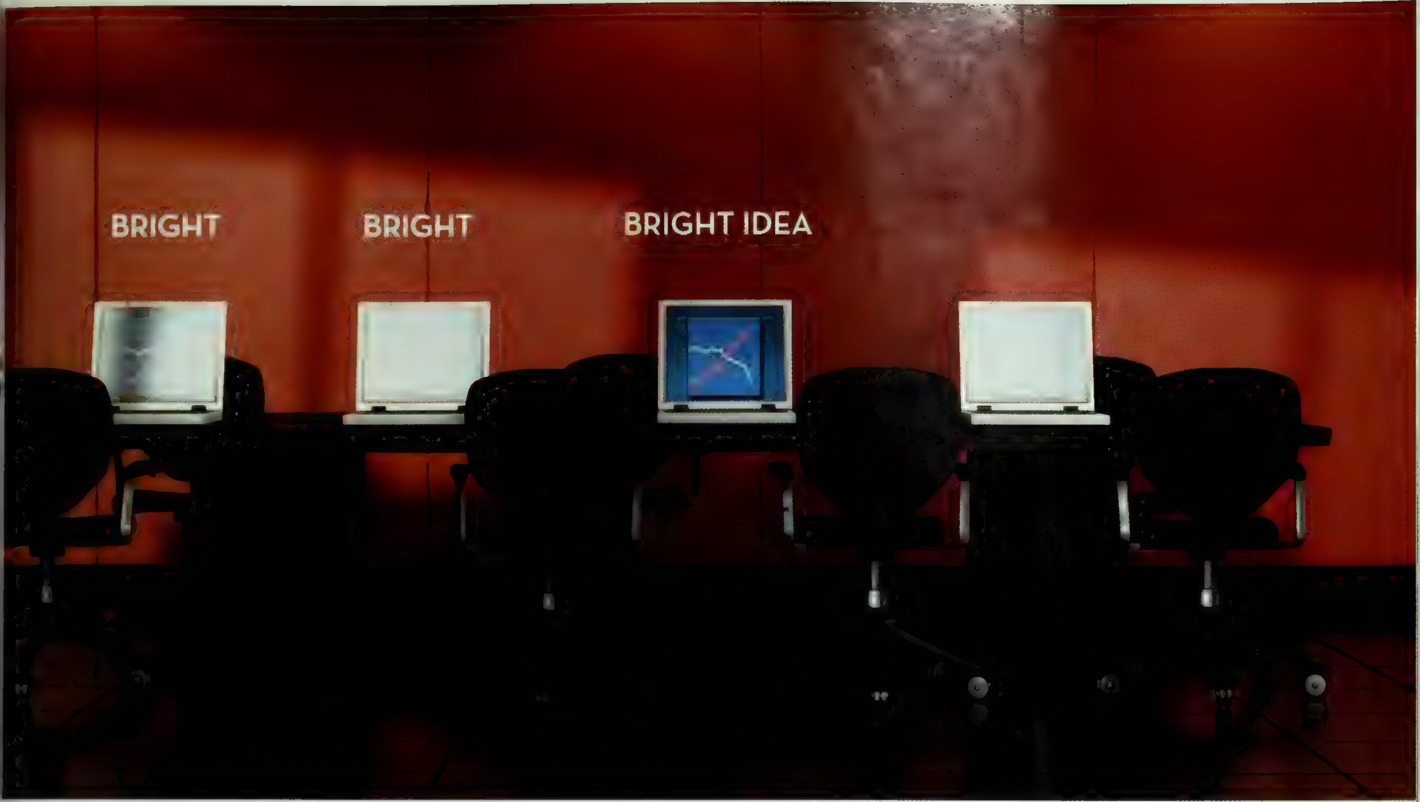
Kroloff moved to further support contemporary architecture in the region when he recently cohosted a rebuilding exhibition, called *Newer Orleans: A Shared Space*, at the Netherlands Architecture Institute (NAI) in Rotterdam. It featured plans by U.S. and Dutch firms.

MVRDV proposed a community center built into the side of a newly constructed hill; UN Studio designed a zigzagging structure (left) housing a media library, city offices, and a large auditorium; Morphosis proposed a smaller New Orleans with a more intensified downtown; and Hargreaves Associates drew up floo infrastructure connected to the community via parks and bridges.

NAI director Aaron Betsky, who cohosted the exhibition, hopes the plans will produce symbols to encourage people to return to the city and inspire new thinking in the region. Several Gulf Coast legislator and designers, he says, have traveled to the Netherlands to discuss infrastructure and architecture. Betsky disagrees with Duany's past assertions that architecture has to be what people in the region ask fo

"The question is not giving people what they want. It's giving people more than they want. Giving them something to believe in. If you give people what they know—McDonald's architecture—you're producing a Wal-Mart version of urbanism. Creating a mythical path that never existed will not make it an attractive place to live."

Duany, in turn, is critical of such "detached" schemes: "They don't meet with residents. Their thoughts have to do only with aesthetic concerns." He adds, "This is not a canvas for vanguard ideas. This is a social situation with



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(continued from previous page)

tremendous opportunities."

Kroloff says the event was not a planning exercise, but was meant "to inspire architects and show that there are contemporary solutions for New Orleans."

Is there common ground?

Despite aesthetic and procedural differences, most designers working in the region say they share common ground in sound planning principles. But whether the sides will come together is in question. Kroloff, who admires the CNU's ability to implement its ideals in large-scale planning projects, calls the bickering "foolish," and says "we don't have time for it." Duany agrees, but insists that his group has to be invited to be part of the "elite" discourse.

Meanwhile, WRT principal John Beckman suggests that architectural debates might be premature. "The most pressing needs in New Orleans remain citywide—and neighborhood-specific—analyses and planning. I believe the results of this work are more critical to the short- and long-term sustainability of the city than specific architectural designs." *Sam Lubell*

Demolition begins in New Orleans, as designers and preservationists fight to limit its scope

Demolition in the Lower Ninth Ward.

Building demolition in New Orleans has begun. On March 6, the U.S. Army Corps of Engineers began tearing down 125 homes in the city, identified as a "risk to public health and safety." These were slated to be destroyed by the end of March, says John Fogarty, an engineer tasked with debris removal and demolition for the corps. Structures in the first wave of demolition are located in public rights of way, and most are in the Lower Ninth Ward neighborhood, Fogarty says.

Malana Joseph, a spokesperson for Mayor C. Ray Nagin, says that initially, 5,500 homes were red-tagged. Demolition was stalled by a January civil suit filed by residents. A federal court ruling allowed the city to proceed, using strict notification guidelines. But the delay won enough time for preservationists and city officials to reevaluate structures. They have since cut the list in half.

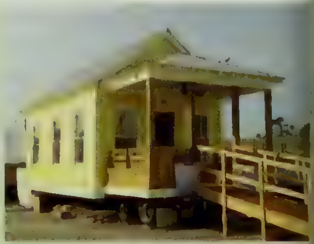
"In the early days, there were rumors that 50,000 homes were going to be demolished," says Kevin Mercadel, program officer for the New Orleans office of the National Trust for Historic Preservation. Fears were justified, since initial assessments, conducted under FEMA debris-removal contracts, were fairly chaotic. Mercadel says that with the glut of subcontractors involved in building assessment it became difficult to determine who tagged properties, and what criteria they used. He adds that many inspectors lacked construction expertise.

Fearing that historic structures might be quickly destroyed, the New Orleans Preservation Resource Center (PRC) partnered with the National Trust to organize volunteer architects and structural engineers to reevaluate properties. Mike Centineo, director of the city's Office of Safety and Permits, inspected 5,500 red-tagged buildings and reduced the citywide number to 1,900, says Mercadel, whose team has identified 369 red-tagged buildings in historic districts. Of those, 199 can be saved, he adds.

Many of the city's red-tagged structures were in poor condition prior to Katrina, plagued by termite damage, rot, or faulty construction, Mercadel says. Much of that is easily repaired. The home of jazz musician Kidd Skidmore, in Holy Cross, had been marked for demolition because the front wall was separated from the structure. "It's a simple repair that requires jacking it up, repairing the wall, and reattaching it," says Mercadel.

Demolition is moving slowly, so preservationists should have time to save more structures. For now, teardowns are on hold until the owners of the next 2,100 identified structures can be notified, the Army Corps' Fogarty says. *Angelle Bergeron*

Designers hope Katrina Cottages will replace FEMA trailers



In her effort to provide an alternative to the ubiquitous FEMA trailers that have been dispersed after Hurricane Katrina, a New York architect has developed a new model for affordable housing: It is called the Katrina Cottage.

"My goal is to take back the word 'affordable,' " says Marianne Cusato, principal of Marianne Cusato Associates. Her design for the cottage (right), first unveiled at the Mississippi Renewal Forum last fall and showcased at the International Builders' Show in Orlando in January, has become a symbol of hope for thousands of Gulf Coast residents whose homes were destroyed.

Cusato's cottage is a 300-square-foot structure that can be constructed faster than a FEMA trailer for less than $35,000. (FEMA trailers cost an estimated $60,000 to $100,000 each.) The traditional-style house is built with fiber-cement siding and a crimped metal roof. The cottage is a more attractive alternative to the sterile FEMA trailers, and can ultimately be incorporated into long-term plans as guest houses or studios. Cusato's cottage is one of several models that came out of the forum, but because it was actually constructed, it became a tangible object that sparked much interest.

Architect Andrés Duany, who helped lead the Mississippi forum, originally called for a possible alternative to FEMA trailers. Whether the cottages will become a reality depends on the federal government's support. Mississippi Governor Haley Barbour has testified before Congress on the structures' behalf.

At a recent Louisiana Recovery Authority charrette in Arabi, Louisiana, a team of architects (many of whom took part in the Mississippi forum) developed a distinctly Louisiana-style cottage model that is about twice the size of Cusato's version. That team is now developing model parks in Mississippi and Louisiana that will feature 17 Katrina Cottage designs and a builders' square where manufacturers of cottage components can display their wares.

Meanwhile, the worldwide construction industry seems to have taken note of the cottages. Cusato recently received a request for a prototype model to be built in Ghana, Africa. *A.B.*

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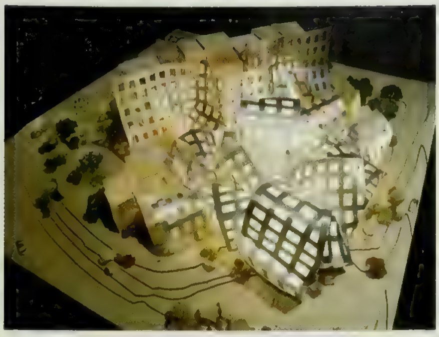


The complex will be both ordered and chaotic.

Gehry designing first Las Vegas building

Frank Gehry is the newest act to play Las Vegas. On February 11, the 76-year-old architect unveiled his first Vegas building: the $60 million Lou Ruvo Alzheimer's Institute, located downtown. The 2-acre complex will be built on land deeded to the institute by the city as part of its 61-acre Union Park development.

The five-story, 55,000-square-foot building will feature clinical, research, and outpatient exam rooms for Alzheimer's and other brain-disease victims. Additional plans include a 9,000-square-foot banquet hall, flanked by a Wolfgang Puck café and catering kitchen on one side, and an interactive "Museum of the Mind" on the other.

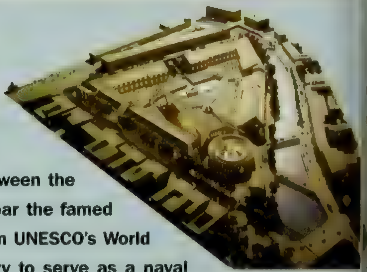
The building's banquet hall will be covered by a wildly curvy, undulating metal-and-glass trellis reaching up to 75 feet, while the main entrance will be made of stacked building blocks separated by glass-enclosed spaces. The contrast suggests the dual functions of the brain, simultaneously ordered and chaotic, structured and imaginative.

"This is something that will separate us from any other place on the face of the earth," says Mayor Oscar Goodman, using typical Las Vegas-style hyperbole.

The project will be funded by the Las Vegas-based nonprofit Keep Memory Alive Foundation for brain-disease research. The foundation was founded by Larry Ruvo, Nevada's senior managing director for Southern Wine and Spirits. The new building is named after Ruvo's father, who died of Alzheimer's.

Gehry characterized the project as "the mouse that roars" due to its modest yet assertive presence next to neighboring high-rise developments. Construction is expected to begin August 4, with completion in 2008. *Tony Illia*

Foster redeveloping Russian island



In February, officials in St. Petersburg, Russia, announced the selection of Foster and Partners to lead a redevelopment of New Holland Island, located in the city's historic center.

New Holland is a 19-acre artificial island, formed between the Moika River and the Admiralteisky and Kryukov canals, near the famed Mariinsky Theater. Five buildings on the island are listed on UNESCO's World Heritage Register. Built in the first half of the 18th century to serve as a naval base, it came under increased military control and remained a closed zone throughout the Soviet period. In December 2004, the military turned the area over to municipal authorities.

Foster's conversion plan (right) will integrate the site's disparate elements around a roofed amphitheater enclosing a pond. A gleaming cupola will top the star-shaped structure, which will function as a year-round facility for aquatic events and open-air performances. The arena will be complemented by a 2,000-seat concert hall, three hotels, a two-tier parking lot, gallery space, and retail and office spaces. Foster, chosen via a city-sponsored competition, enlisted St. Petersburg architectural firm Studio-44 as consultants for the venture. The team's projected design costs came to $320 million, with an anticipated completion date of 2010.

The plan aims to create a flexible cultural quarter to bolster a languishing part of the city. Perhaps Foster's most forceful intervention entails the addition of eight bridges across the canals surrounding the island. A single bridge exists today. Some are worried that diminishing the introverted quality of the island risks undercutting the aura that is inseparable from its landmark architecture. The recent developments will complement French architect Dominique Perrault's expansion of the Mariinsky [RECORD, August 2003, page 36]. Although the cultural complex will continue to be state-run, the city stipulated that the developer, Moscow-based Shalva Chigirinsky, must invest at least $300 million. ***Paul Abelsky***

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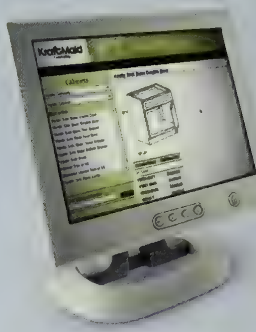

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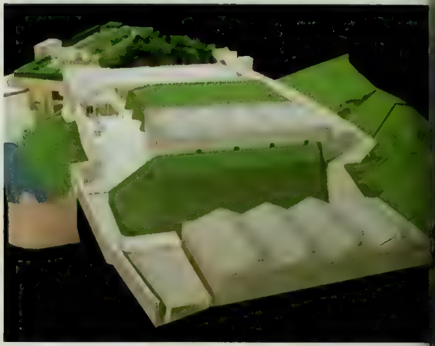
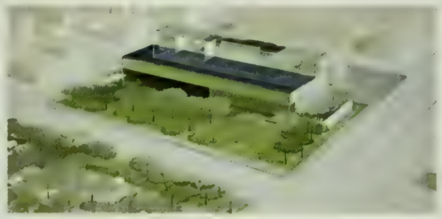
Asia Society unveils ambitious new projects

In late February, Asia Society, a New York–based group that works to strengthen ties between people in Asia and the United States, shared plans to aggressively expand its presence with more than $100 million in new building projects and new programming. New buildings are being constructed in Hong Kong and Houston, and the society is also opening a center this spring in Mumbai, India.

The $52 million center in Hong Kong was awarded to architects Tod Williams Billie Tsien via a competition in 2001. The project has since been delayed, largely due to lease negotiations, says Billie Tsien, but is expected to be completed by 2008. Located in the city's Central district, the new, 20,000-square-foot project will include a café, a conference center, a gift shop, and an exhibition space. It will take the form of a small glass-and-granite box cantilevering over a small ravine filled with giant banyan trees. A lush roof garden will contain a reflecting pool. The project will also include renovation of two mid-19th-century munitions buildings and a lab building that wi be turned into a theater, a museum, and offices.



A model of Asia Society's Hong Kong project.



A model of Taniguchi's Houston building.

The $40 million, 35,000-square-foot Houston project by Yoshio Taniguchi [RECORD, January 2005, page 34], set to open in 2010, is still in preschematic design. But new models show that it will likely include a long, rectilinear building with large, flat overhangs, overlooking a rectangular poo and two gardens. It will include a 300-seat theater, a café, meeting rooms, classrooms, and offices.

Asia Society already has centers in Houston Los Angeles, San Francisco, Washington, D.C., Hong Kong, Manila, Melbourne, and Shanghai. But the new projects, say organization officials, will help cement its reputation and better organize operations that had been either scattered or too small. *S.L.*

Architecture critic Allan Temko dies

Allan Temko, the Pulitzer Prize–winning architecture critic for the *San Francisco Chronicle* died on January 25 in Orinda, California. The cause of death was heart failure. He was 81.

Temko was never lukewarm in his views. He eagerly waded into development fights, championing distinctive architecture that respected the street and the skyline. Temko wrote in *No Way to Build a Ballpark*, a 1993 collection of his essays: "Every fight has its own rationale, but I never doubted that each, in its own way, was striving for excellence, or at least something better than mediocrity."

When Temko joined the *Chronicle* in 1961 he was 37, and had already lived a colorful life that included naval service in the Pacific during World War II, and a friendship with writer and Columbia classmate Jack Kerouac. He appears in Kerouac's *On the Road* as writer Roland Major.

As a critic, Temko conveyed the essence of buildings like Kevin Roche's Oakland Museum (1969), with its "undeniable sense of the expansion of life, and the enlargement of human possibilities." But he's best remembered for his crusades for a more civil landscape. In the 1960s, he helped force a redesign of the San Mateo Bridge south of San Francisco. In later years, he urged the removal of the Embarcadero Freeway, achieved in 1991 with the assistance the Loma Prieta Earthquake.

Another target of his scorn was Postmodernism, at least in its commercial '80s heyday. He scorned a local design review climate where "anti-modern planners compel unlettered modernists to mimic mediocre historic models and half-baked classical notions of their own."

Temko received the Pulitzer Prize for criticism in 1990. He retired in 1993, but continued to write for several publications. *John King*

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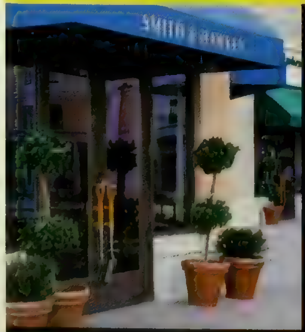

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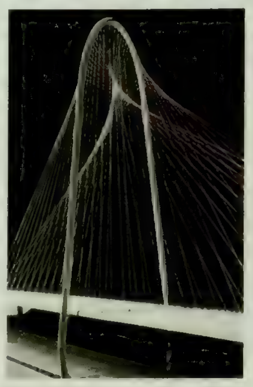
alatrava's first Dallas bridge beginning construction



The arched bridge would span Dallas's Trinity River.

hether a city needs a new image merely a stylish tweak, a ntiago Calatrava–designed idge could be just the ticket. llas is hoping so, anyway, cause in 10 years it will have ree of them, all spanning the eandering Trinity River on the stern edge of downtown.

Aware that the Trinity is both greatest natural asset and its ggest missed opportunity, city ficials hired Calatrava to design a gnature bridge, extending Woodall dgers Freeway into west Dallas. will be called the Margaret Hunt l Bridge, named for a noted Dallas philanthropist.

The $57 million span, funded by federal, state, d private contributions, is set to begin construc- n this spring, though the exact date is has not en determined. It will open in 2008. The new bridge will feature a 300-foot-high parabolic arch reminiscent of Eero Saarinen's Gateway Arch in St. Louis, from which cables will descend in a grand spidery web.

Dallas Mayor Laura Miller, perhaps swept up in the moment, predicted the bridge would become "the Eiffel Tower of Dallas."

Calatrava is also designing a 12-lane, $145 million bridge for Interstate 30, and a companion piece for Interstate 35 nearby, both also on the western edge of downtown. The first is funded and is scheduled to open in 2010, the second probably five years later.

"Fifteen million people come to Dallas every year," said the architect. "These bridges will be the new civic gateways that create the image of the city." *David Dillon*

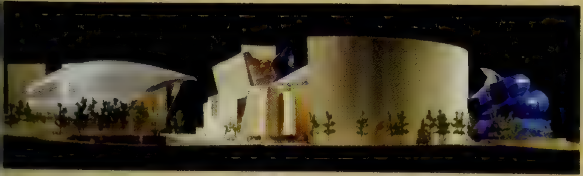
Dispute threatens Jerusalem's Museum of Tolerance

A dispute over moving Muslim graves in Jerusalem to make way for Frank Gehry, FAIA's $200 million Museum of Tolerance (model, below) threatens to delay, or possibly end, construction on the project.

After graves were discovered on the site during early phases of construction, two Muslim groups—Karamah, a human rights organization, and the Al-Aqsa Company for the Development of the Properties of the Islamic Trust—demanded that all work be banned at the site. The museum is to be located at the foot of downtown Jerusalem's Hillel Street.

In March, Israel's High Court of Justice granted a 30-day temporary injunction against work at the site and has referred the parties in the dispute to mediation.

Rescue excavations of the graves by the Israel Antiquities Authority would last several months, according to the authority's lawyer, Yoram Bar-Sela. Such delays occur often in Israel's capital, because "all of Jerusalem is one big archaeological site," says Osnat Goaz, spokeswoman for the authority.



An underground parking garage and ground-level parking lot, built in the 1960s, previously occupied much of the museum site. The site is part of an old Muslim cemetery, which has not been used for burial for decades. A larger part of the cemetery lies under an adjacent park.

The Los Angeles-based Simon Wiesenthal Center, which is building the museum, claims it did not know about the graves before planning construction. Spokesperson Charles Levine says that the city and the Israel Lands Administration assured the organization that no problems existed with the site.

The museum was originally to have been located far from the city center, in northeastern Jerusalem. One reason for moving it was the hope by then-mayor Ehud Olmert, who is currently the acting prime minister of Israel, that a Gehry-designed building would revitalize the downtown. The project, to be built of stone in keeping with a Jerusalem ordinance, as well as glass and titanium, will include cultural and conference centers. ***Esther Hecht***

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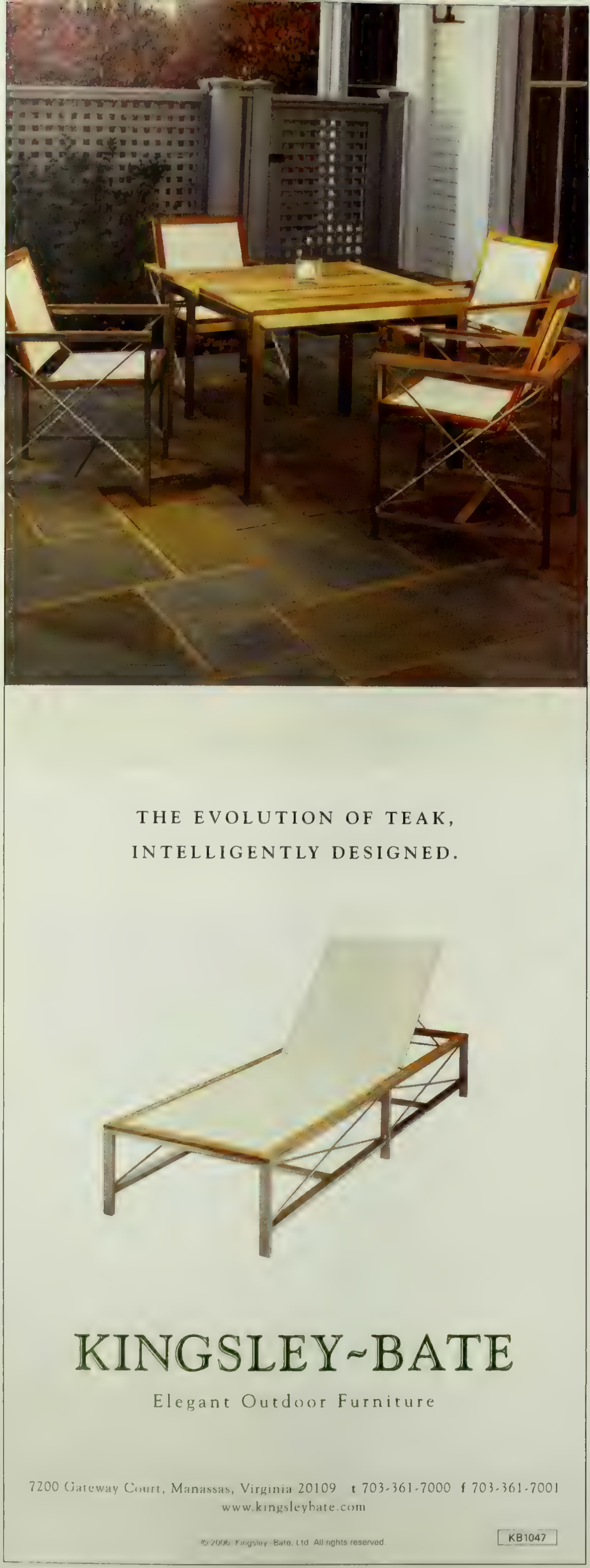

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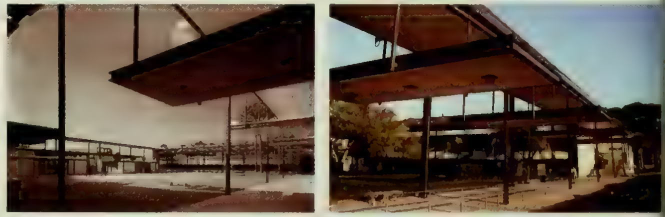
Rudolph's Riverview High School threatened

In February, Florida's Sarasota County School Board announced plans to demolish its Riverview High School. The open, Modernist structure of concrete and glass-on-steel frame was designed by Paul Rudolph in 1958. *Sarasota School of Architecture* author John Howey, FAIA, says the building was one of the best of the local movement's blend of Modernist forms and climate sensitivity.

According to the school board, Riverview can no longer be maintained, partly because of changes made to the building over time. Chuck Collins, director of construction for the school board, says that the reworked air-conditioning system is out of date, that pipes and wires block daylight, and that the building is too small to hold the school's 3,000 students. Security is difficult given Rudolph's open design, and officials want to be able to accommodate larger commo areas and new technology spaces.

Martie Lieberman, board secretary for the Sarasota Architectural Foundation, is astonished at the effects of so-called school improvements: "They never consulted anybody about integrity."

Howey, a foundation member, says the group is considering forming a nonprofit that would help fund a rehabilitation of the school. The school district is preparing to construct a new building, designed by local firm BMK Architects, next to the Rudolph structure. The latter would b demolished upon completion of the new building in 2008, and replaced with a parking lot. *David Sokol*



Riverview High School when built, in 1958 (left), and as it stands now (right).

Behnisch building for new Harvard campus

In February, Harvard University tapped Stuttgart-based Behnisch Architekten to design a 500,000-square-foot science complex and stem-cell-research facility. The project will be the first new construction at the university's expansion in the Allston section of Boston. Allston is directly across the Charles River from Harvard's main campus.

According to Behnisch partner Stefan Behnisch, the initial plan calls for a mix of several buildings with a similar scale to the existing Allston neighborhood. The layout of the complex will follow the example of Harvard Yard, with its open corners and varied groupings. The materials will reflect Harvard's eclectic campus, which in addition to its signature red brick, utilizes wood, concrete, glass, and steel. The design will also meet or exceed Harvard's sustainability standards, which roughly correspon to a LEED Silver rating.

Harvard, which owns about 35 acres in Allston, announced its expansion in 2004. The plans call for developing about 200 acres for classrooms, residential buildings, cultural facilities, labs, and other uses. Planners Cooper Robertson, architec Frank Gehry, and landscape designer Laurie Olin have been commissioned to help plan the new campus and urban framework. Groundbreaking fo the new science complex is slated for next year. *Ted Smalley Bowen*

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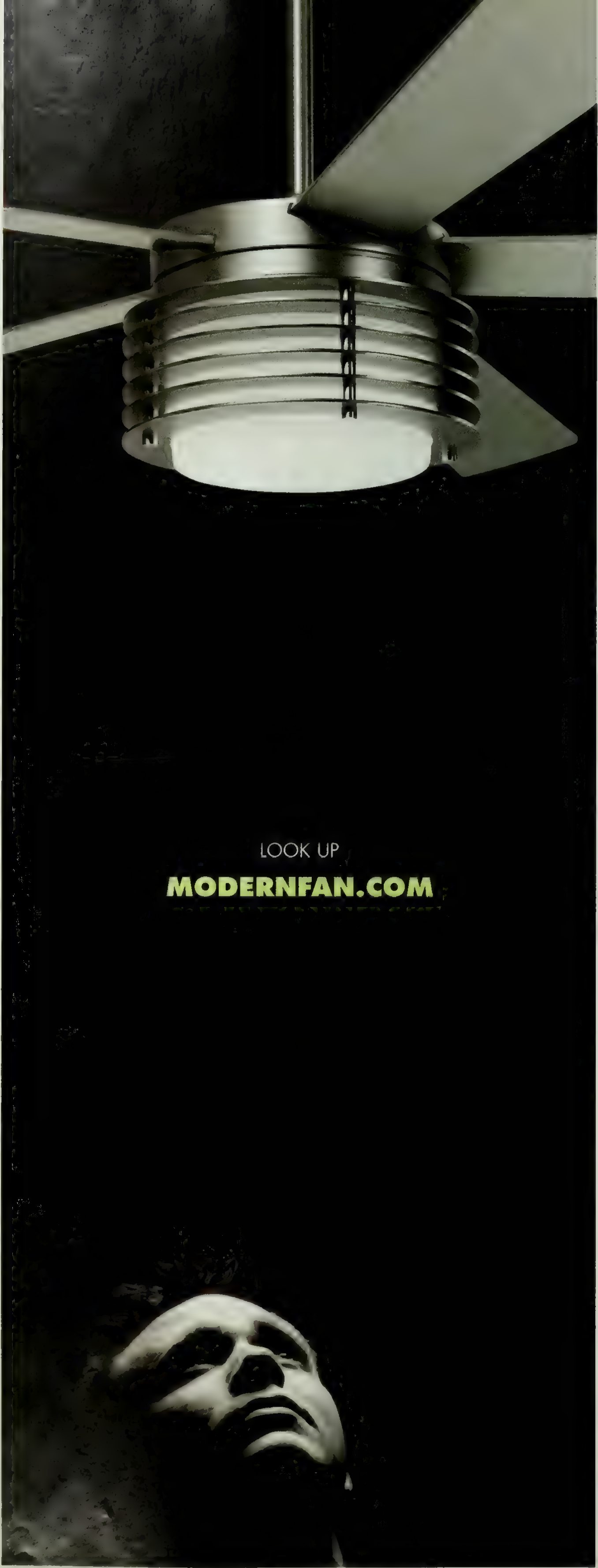

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Chad Oppenheim: Miami's man of the hour

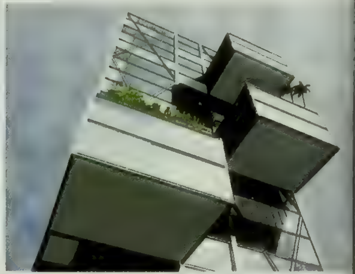
The name Chad Oppenheim is synonymous with Miami's condominium boom. The 34-year-old architect, who founded Oppenheim Architecture & Design in 1999, has completed 18 projects, including residential high-rises like Ten Museum Park, 3 Midtown Miami, and Ilona. His newest projects include one of the tallest towers in Miami and a condo unlike any in the city.

Set to break ground in 2007, Cube condominium, in Miami's design district, is structured in modules to allow residents to configure dwellings both vertically and laterally. The $30 million project features 112 residences and street-level retail. In partnership with Richard Meier, FAIA, and the sons of I.M. Pei, FAIA, Oppenheim is also designing a pair of towers rising from a multilevel platform in Downtown Miami. Dubbed Lynx, each tower features three facades and blends offices, retail, condos, and hotel rooms. The $300 million, 70-story project is set to break ground in mid-2007.

So what makes Oppenheim such a hot commodity in the area? According to local architecture critics, it's a combination of talent, marketing savvy, and excellent timing—Miami has recently experienced an unprecedented boom in condominium building, although the housing market here is just beginning to cool.

The old Miami School, points out Adam Druzen, director of architecture at Florida International University, was a blend of high-end luxury living and cookie-cutter developments. Oppenheim's buildings transform this aesthetic from static boxes to dynamic, light-filled spaces with active rooftops, elevated swimming pools, and lush gardens. It's a combination of edginess and hedonistic comfort that's appealing to the pleasure-oriented generation here.

"I want to prove you can create sensual architecture that works from a business standpoint," says the architect. J.F. Lejeune, a professor at the University of Miami's School of Architecture, says Oppenheim has "helped put the role of the architect front and center in Miami."



Cube residences (above) will cantilever off the building. Lynx's towers (below) will soa

Oppenheim, a native New Yorker, is now setting his sights beyond residences, and beyond Miami. He is designing his first gallery space for the city's Emmanuel Perrotin Gallery; a renovation of an existing 1959 Miami Modern showroom. He had also been commissioned to design a $1 billion hotel/condo for The Hard Rock Hotel & Casinos in Las Vegas, but that project was recently shelved for budgetary reasons.
Jennifer LeClaire

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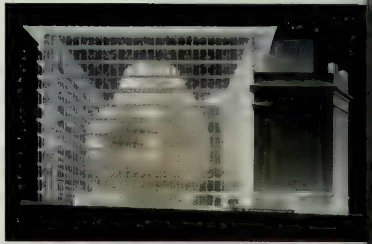
New meeting space being designed for E.U.

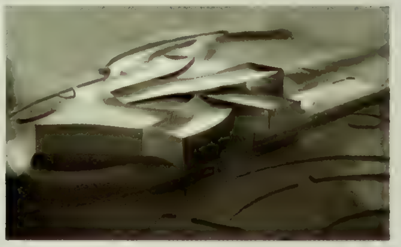


A design has been selected for a new meeting space for the European Union in Brussels. The building, called the Residence Palace, will supplement the adjacent 1927 Palace Complex, designed by architect Michel Polak, which now serves as E.U. Council headquarters. The winning competition entry was submitted by the architecture firm Samyn and Partners of Brussels, engineering firms Studio Valle Progettazioni of Rome, and U.K.-based Buro Happold.

The 645,000-square-foot building will include a press briefing room, a large, 250-seat conference room, 28 translation booths, and a dining room. Samyn and Partners principal Phillippe Samyn describes the steel-and-concrete-frame structure as a "lantern," due to its glowing, glass-box appearance, created by facade layers of both translucent and transparent glass. The programmatic area will occupy a bulbous, multistoried cylinder in the center of the box, and a lighting scheme will change the color of the glowing lantern at night.

Sunlight will enter the private meeting hall through skylights in the center of its ceiling. This hall will be enclosed by a double-skinned facade, whose outer skin will be made of oak-frame windows alluding to the 25 countries in the union. This will gesture toward the "incredible cultural patchwork" of Europe, says Samyn, and will allow the architect to champion environmental protection to the council members. The windows will also provide an acousti- cal barrier from street noise, and another layer of thermal insulation.

The Belgian government is paying about $240 million for the project, which is scheduled for com- pletion in June 2013. *Sarah Cox*



Swooping green roof highlights new Holl design

The Herning Center of the Arts in Jutland, Denmark, has announced that Steven Holl Architects will design its new center. The 72,000-square-foot building will incorporate the institution's art museum, and house its MidWest Ensemble for chamber music and its Socle du Monde biennale exhibition.

The curving panels of Holl's prominent "green roof" are stressed-skin structures made of carbon fiber strands with a resin matrix. They con- tain a layer of sedum, a plant mixture that contains severa species suitable for green roofs, on their exteriors.

The roof's swooping planes, which allow natural light into the building, were devised to create lively landforms for the otherwise flat landscape of the region.

To further connect the roof to the groundscape, the architects plan to allow it to be occupied in places. A geothermally sourced HVAC system and recycling of graywater add to the green theme. The project is estimated to cost $19 million, and is scheduled for completion in 2007. *S.C.*

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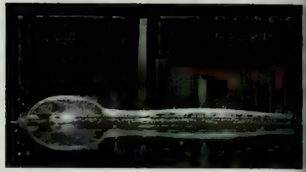
News Briefs

Foster's canopy scrapped in Hong Kong Norman Foster's giant glass canopy for the Hong Kong government's $5 billion West Kowloon Cultural Complex (WKCC) [RECORD, March 2005, page 30] has been scrapped. The roof, the centerpiece of the complex, was first proposed in 1999 and has been mired in controversy ever since. It failed to win public support and interest from the three short-listed developers.

Foster's 390-foot-high, undulating glass roof was to cover at least 55 percent of the complex's 100-acre site, and was estimated to cost more than $500 million. It was criticized in a recent public review as "expensive and environmentally unfriendly." The public also raised concerns about putting all of the project's arts facilities, including four major museums, under one roof, and awarding the whole site to a single developer to build all at once. The WKCC was also to include theaters, and other performance venues, such as an amphitheater and open piazzas.

The government responded by revising its requirements last October, so that the winning developer could only build on half the site and was required to pay $3.87 billion up front. This caused all three developers to withdraw in mid-February. The government has since insisted the project will go forward eventually and will review these issues by September 2006.
Shirley Chang

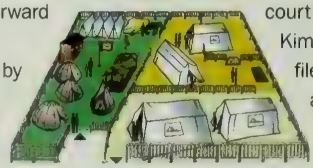

A rendering of the undulating roof.

Tent city in Central Park
The living conditions endured by the world's refugees are difficult to comprehend. *A Refugee Camp in the Heart of the City*, an upcoming exhibition created by Doctors Without Borders, aims to change that. The installation will feature an 8,000-square-foot tent city placed in New York's Central and Prospect Parks next September.

Elements will include a shelter area with small fabric tents, as well as makeshift structures made of metal and wood. The exhibition will also include examples of a medical clinic (with medical supplies), a structure where water and food are supplied, and temporary latrines.

Doctors Without Borders specializes in emergency medical treatment, but also provides emergency shelter when necessary. According to a 2005 survey by the U.S. Committee for Refugees and Immigrants, over 33 million people are now living in refugee camps.

The exhibition was created in France 10 years ago and has visited 10 countries, making an initial trip to New York in 2000. Next fall the show will also be placed in parks in Atlanta and Nashville. *S.L*


The planned exhibition installation.

Viñoly and Kimmel Center settle suit Lawyers from Philadelphia's Kimmel Center for the Performing Arts and New York–based Rafael Viñoly Architect (RVA) have reached an out-of-court settlement of the Kimmel's lawsuit filed last November against RVA. The suit alleged that the firm negligently executed its responsibilitie during the design and constructio of the concert hall, sending projec costs over budget by more than $23 million. In a jointly issued statement dated March 3, neither admitted liability or fault. The terms of the settlement are confidential. RVA declined comment, and Kimmel representatives did not return phone calls.
Joseph Dennis Kelly

:ottish Parliament roof llure investigated The ottish Parliament debating cham- r closed on March 2, when a -foot-long roof strut slipped from metal housing and swung over e heads of elected officials. The micircular chamber, which seats e 129 members of the Scottish rliament, was evacuated.

Arup, the project's structural gineering firm, was called in to ;pect the 221-pound beam and a ctured bolt. Materials testing firm anger Materials Science will alyze the bolt and laminated-oak am. During the inspection, parlia- entary debates will be held at e Hub, a former igious assembly ll that dates back the 19th century.

The Parliament debating hall.

The late Spanish chitect Enric ralles and U.K. firm MJM designed the 45 million building, ich opened in late 04, three years later than planned. st year, the building was awarded e Royal Institute of British Architects BA) Stirling Prize. *Robert Such*

otests against WTC emorial With construction on e World Trade Center Memorial out to begin, victims' families and ners recently began pressing for its design. On February 27, they gath- ed at Ground Zero, charging that e current plan is unsafe and disre- ects victims by placing their names low street level. The protesters— cluding victims' family members, lice officers, firefighters, and emer- ncy workers—charge that placing e museum and the names under- ound insults the legacy of those o died. They also claim that with ly two main ramps out of the com- ex, the museum will not have ough fire exits. A group called Take ck the Memorial has formed a Web e, www.takebackthememorial.org, d is circulating a petition to stop construction on the project.

The Lower Manhattan Development Corporation, which is overseeing the design and appointed the 13-member panel that chose it, has said that the memorial and museum will have 15 exits, including emergency stairwells. The memorial is scheduled to open in 2009. *S.L.*

Finalists to master plan Pittsburgh Cultural District The nonprofit Pittsburgh Cultural Trust has announced four finalist teams to master plan the city's new Cultural District Riverfront Development. The development consists of a 6-acre site located in Pittsburgh's Cultural District, a 14-square-block area downtown near the Allegheny River. The district is home to five major theaters, as well as restaurants, galleries, and other amenities.

The four finalist teams include the following firms: Koning Eizenberg Architecture; MVRDV; Behnisch, Behnisch & Partner; and Steven Holl Architects.

The winning plan may include residential, retail, restaurants, plazas and parks, public arts projects, performance spaces, and improved access to the riverfront. The trust will announce the selected team this summer. *Jennifer Lucchino*

ENDNOTES

- The Skidmore, Owings & Merrill (SOM) Foundation has established the 50,000 SOM Prize, which will be awarded to a promising student in Architecture, Urban Design, and Design.
- New York's Van Alen Institute named Adi Shamir, a former dean at the California College of the Arts, its executive director.
- In January, Terrence E. O'Neal, AIA, became the first African-American to serve as president of the American Institute of Architects New York State.

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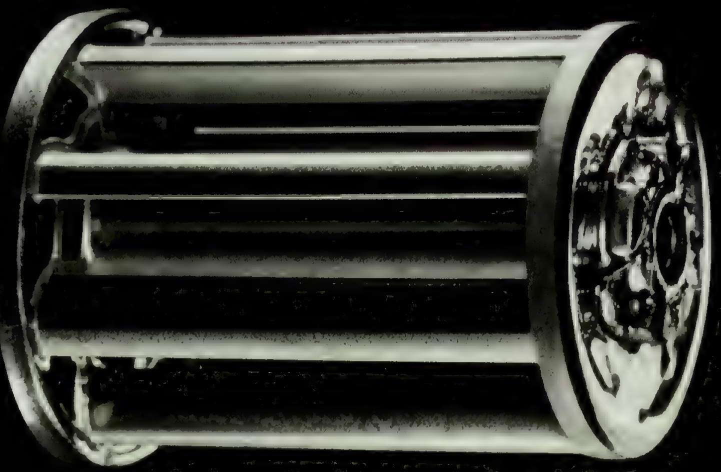

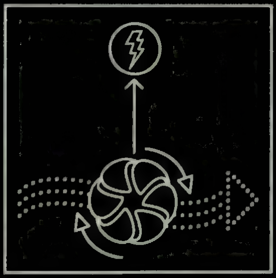

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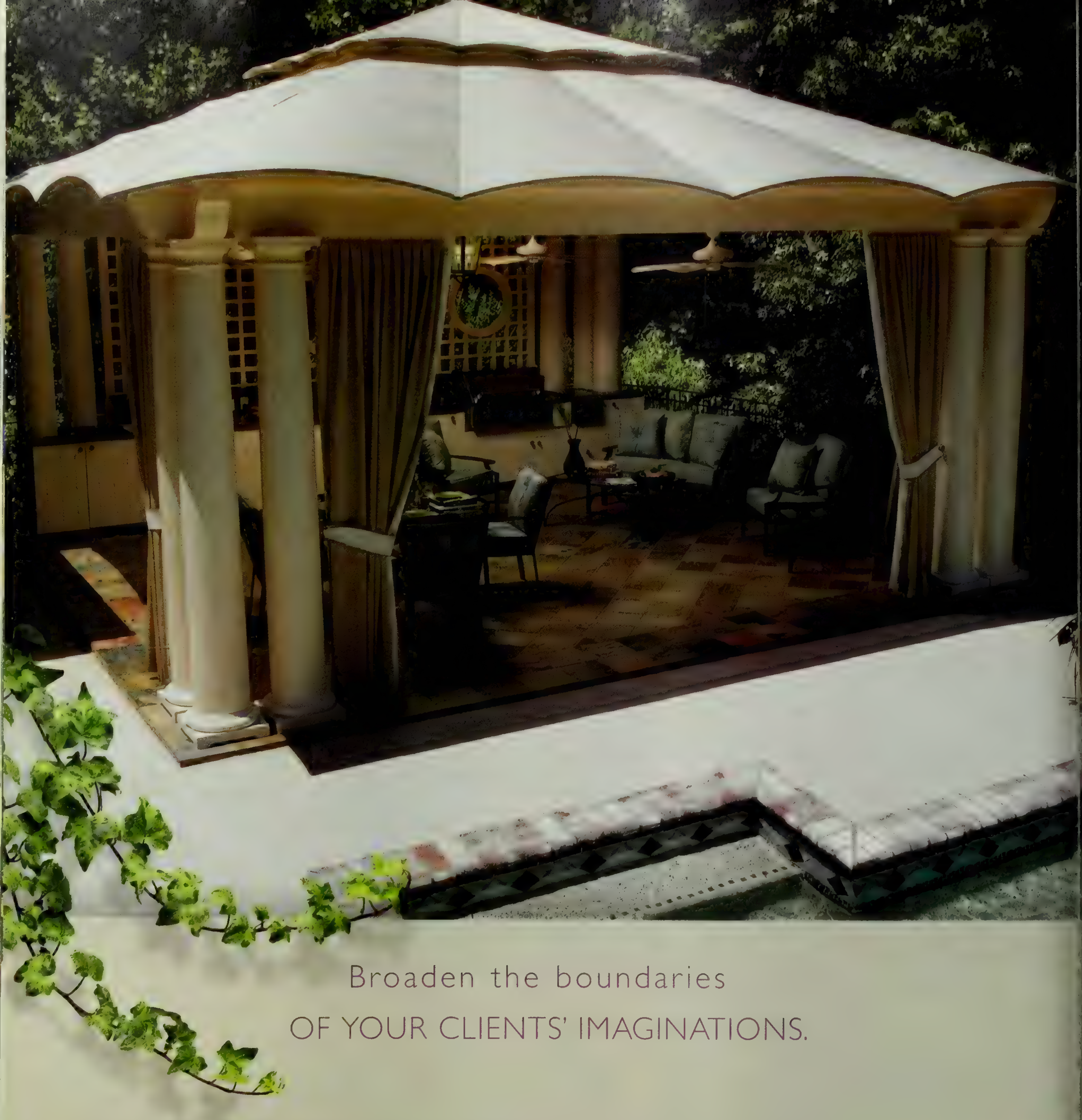Broaden the boundaries

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rchitects play a role in both the creation and the destruction of buildings, and this month rchrecord2 features one architect who has found a mission in artfully documenting abandoned state iental institutions before this dying building type gets destroyed. While Chris Payne stays just ahead f the wrecking ball, Terry Boling considers individual properties of materials. Visit Design, Work, and ive at www.archrecord.com/archrecord2/ for more work by these talented individuals and others.

)esign

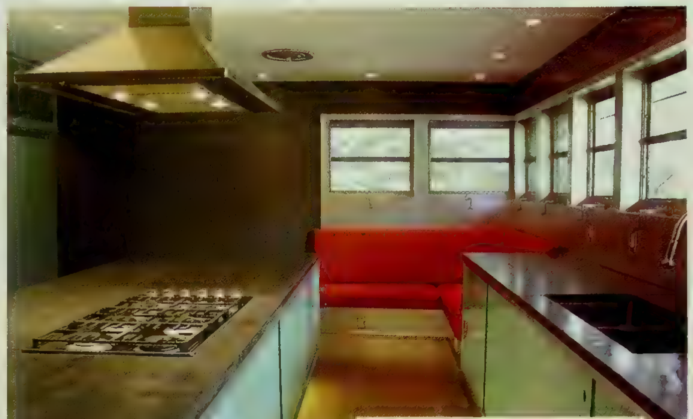
erry Boling: Making a mark in the Midwest

For Cincinnati-based architect and teacher Terry Boling, AIA, the proof of good architecture lies in creating a project full of material connections—a regional approach focusing on an organic design process that explores and exploits the unique properties of each material used. And, while Boling is a sole ractitioner, he doesn't accomplish this experimentation alone. As a full-time rofessor at the University of Cincinnati's School of Architecture and Interior esign, Boling works closely with a group of students and ex-students. "U.C. as a unique co-op program where students are required to work in the real orld for 10 weeks during the semester," says Boling. "That program gives me ie opportunity to hire students I've been working with in class, and the stu-ents then have the ability to put their learning to use."

"The mark of the maker" is a term Boling says he continues to try to efine and make evident in his work, through fabrication of furniture, surfaces, nd finishes on-site. Boling admits that working this way doesn't produce quick sults, but credits his clients with having the patience to let the process take s course. "We're usually working with shoestring budgets," says Boling, "and hat we design isn't paper architecture. Luckily, our clients have been under-tanding of the process. The restraints have worked in our favor. And Cincinnati s at an exciting place right now. It's a time of rich growth for the city, and a ood time to be practicing architecture here."

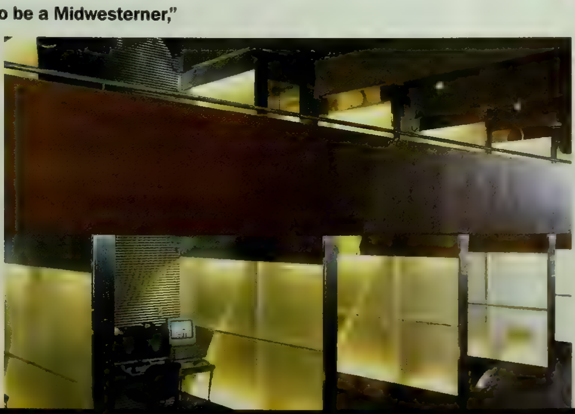
Boling teaches a class about critical regionalism, and his work reflects his oughts on the topic. "I'm often exploring what it means to be a Midwesterner," e says. "What kinds of materials and techniques can e find that are specific to the Midwest? What does it ean to be working as an architect in Cincinnati?"

Part of that regional approach for Boling is an ethi-ally responsible architecture. "It's right in the middle of verything," he says. "Landfills are mostly composed of onstruction materials, so it's obvious that we should se leftovers." For one project, a nonprofit facility called enice Pizza that trains people to work in restaurants, oling and a group of graduate students actually had a



Nicholson Kitchen, Cincinnati, 2005

The kitchen is part of an ongoing renovation of a mid-20th-century home. A floating island with base lighting and hand-cast-concrete countertops occupies the center of the room, while custom sliding-aluminum-plate pantry and closet doors line the perimeter.



Media Bridges, Cincinnati, 2003

Offices for a nonprofit that offers digital media education and training, the project consists of 8,000 square feet on two floors of a historic building in the Over-the-Rhine area of Cincinnati. Translucent walls and colored concrete contrast with the existing rough brick.

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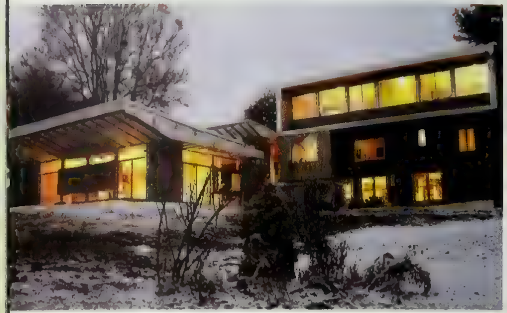
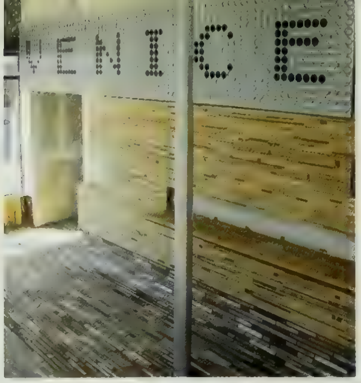


Wyoming Loft Addition, Cincinnati, 2006
Renovation to a Cincinnati-suburban bungalow comprising a bedroom and bath connected to the main floor by a new light-well and stair. A ground-floor addition contains living, dining, kitchen, and support spaces.



Venice Pizza, Cincinnati,
Scrap wood, copper pipes, ar
beer bottles were just some o
materials University of Cinc
students, under the directio
Terry Boling, used to create
faces and signage for a new
restaurant and training faci
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in an existing vacant storefr

zero budget, which forced them to explore the space between thinking and making. "They got on the phone and found everything they could get their hands on—tile from a company's excess, crushed beer bottles that the students made into mosaics, leftover wood from construction sites," Boling explains. "Our discussions revolved around questions of homogeneity and heterogeneity, quilt and mosaic, and even culinary formulations that addressed the idea of leftovers, such as pizza, meat loaf, and soup. It soon became evident that each material treatment would need to have a relationship to the next, both procedurally and aesthetically, for the project to be successful as a collection of components."

The result exemplifies Boling's love of textures and visually decadent yet formally clean structures. "We tend to undervalue beauty," he says. "There's just not enough beauty in the world." For Boling's part, he plans to add more beauty locally, and branch out from there. "I would love to jump scales and broaden my firm's possibilities," he says. "But only if I can keep bringing personalization—a mark of humanity—to every project." *Ingrid Spencer*

For more photos and projects by Terry Boling and his students, go to archrecord.com/archrecord2/.

Work

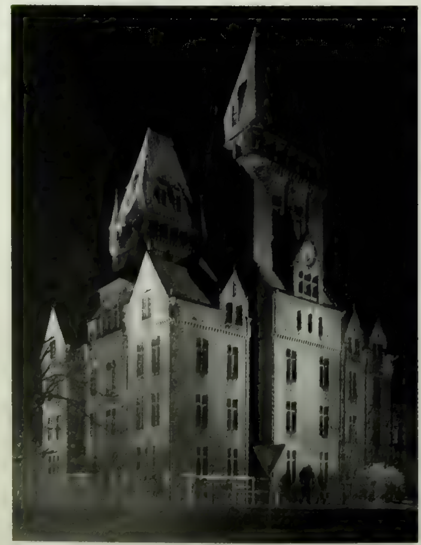
Christopher Payne: Documenting before their demise

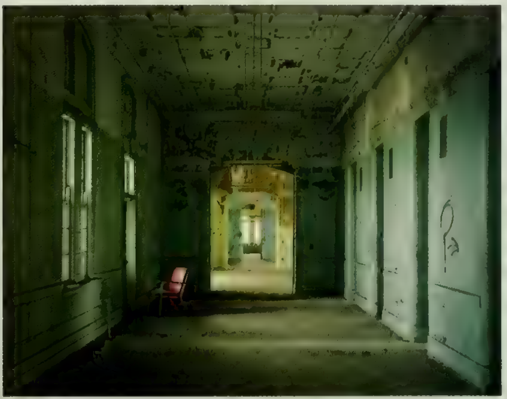
For New York City–based architect and photographer Christopher Payne (right), the only thing depressing about spending days at a time alone with his large-format camera photographing abandoned and decrepit state psychiatric hospitals is that they'll soon be gone. Often majestic in scale and built on self-sustaining farms where patients took part in working the land, dozens of these hospitals once had a purpose that, according to Payne, was much less creepy then movies and TV would have us believe. "These buildings were designed with optimism," says Payne, "with craftsmanship, with the idea that the state had a responsibility to help people with mental illness. To see these landmarks demolished … it doesn't make sense. Greed is behind it, and a lack of vision."

Creating buildings may be Payne's day job (he works for Studio Kenji in New York), but photography is what drives him. Just looking at his startling images, some in black and white, some in color, it's easy to see that Payne is a preservationist at heart, despite the fact that he hates the term. "What bums me is the general apathy and feeling of helplessness in the architectural community," he says. "Most young architects are only interested in what's new and hot. To be concerned with preserving the past risks being labeled a square." Payne admits that others may have a more objective take on the topic, but because he is driven to document, he feels quite in the middle of it. "No matter what quality my photos are," he says, "they are no replacement for what's lost."

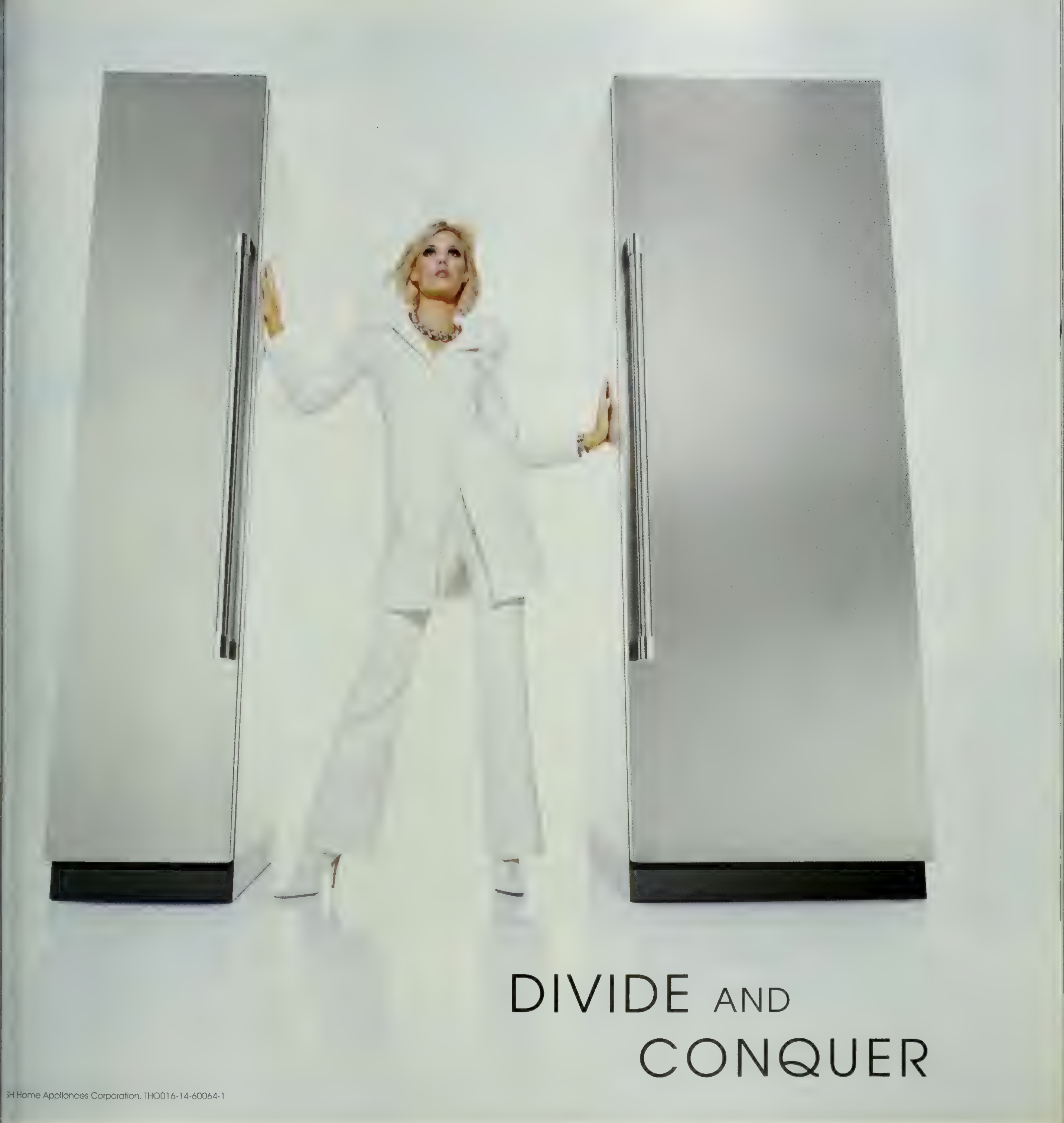
Payne's passion for photographing obscure building types began when, in 1997, he started taking pictures of New York's substations—the power stations that ran the New York subway systems until the 1980s, when they became obsolete. His photos, along with histories and plans, became a book in 2002 (*New York's Forgotten Substations: The Power Behind the Subway*, Princeton Architectural Press). His photos of hospitals will also become a book, complete with plans. Payne has a knack for getting into these dying building types, without artifice. "I tell the truth," he says, "and the officials in charge often feel the same way I do. These buildings are icons of a welfare state—institutions created to protect and take care of people. They're like castles, and I'm just one step ahead of the wrecking ball." *I.S.*

For more, visit archrecord.com/archrecord2/ or www.chrispaynephoto.com/.





Chris Payne's photos capture the faded majesty of the Buffalo State Hospital (above left and right), designed in the late 1800s by H.H. Richardson, with associate architect Stanford White. The building's fate is still uncertain.



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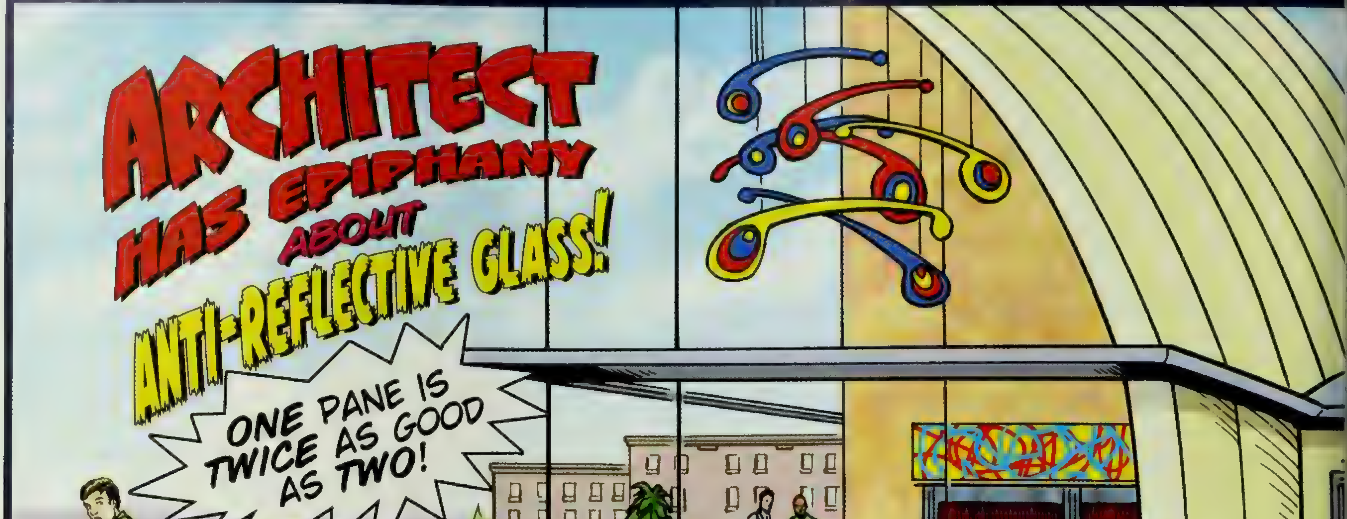
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Phantom pain: A neighborhood lives on after its destruction

Critique

By Robert Campbell, FAIA

1962, in the Boston neighbor- ood called the West End, wrecking rews demolished the final build- igs. It was a carpet-bomb act of rban renewal, an amputation by ne city of its own flesh.

The 12,000 residents, nearly ll of them low-income, were ruth- essly kicked out of their homes and cattered to the winds. Promises ere made that they would be able o come back. But few could afford ne new elevator apartments.

Two well-known writings came ut of the experience, *The Urban illagers*, by Herbert Gans, a book bout the neighborhood's good quali- es, and "Grieving for a Lost Home," y Marc Fried, an essay on the psy- hology of the West End exiles.

What fewer people know, and hat I find deeply moving, is the act that today, 44 years later, the ormer residents still think of them- elves as a community. Every uesday, anywhere from 20 to 60 ormer West Enders meet at the leadow Glen Mall in the suburbs o talk about their old lives in the eighborhood. For many years, they roduced a citizen-access TV inter- iew show. They have made 70 ours of video oral histories. They ave just started a museum on an dge of the old neighborhood (it ecame a middle-class enclave of nid-rises, which looks like a dis- laced fragment of Miami Beach).

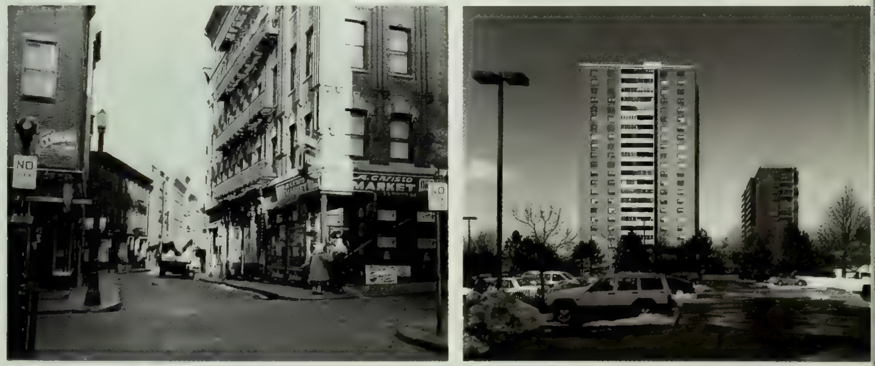
They still maintain, through vol- ntary contributions, a quarterly newspaper, the *West Ender*. Besides news items, the *West Ender* publishes a dozen or so snapshots and 40 or 50 letters in every issue, almost all of them recollections of the old days. *Forty-four years later.* It's a story that I believe may be unique in American history.

What would make a neighborhood, viewed at the time as a slum and labeled as "blighted," become so resonant in the memory of its people?

The West End was a community of mostly second-generation immigrant families. The largest groups were Italian, Irish, Jewish, and Polish, but there were others. It occupied a downtown site along the Charles River.

When federal urban-renewal money became available, city officials and developers looked lustfully at the site. The razing process was brutal. If you owned a building, the day the city took it by eminent domain was the day your tenants started paying their rent to the city, rather than to you, and on that same day you too had to begin paying rent. Owners were supposed to get a fair purchase price, but legalities often dragged out to the point where many took almost nothing.

A policeman, who regularly patrolled the neighborhood, filmed the demolitions over the months it took to complete them. A video of the film runs at the new West End Museum. The images are difficult to believe. Cranes swung heavy balls into the brick walls of what had been, sometimes until weeks or days before, people's homes. I don't know where the bricks went, but the wood from the demolition was burned in big bonfires scattered around the site. Fire and smoke, emptiness and despair: The images are those of a war zone. "They made us into refugees," says one West Ender today.



The dense, intricate nature of the West End (above left) was lost to urban renewal (above right).

Again, though, what's the source of the power that makes this neighborhood live on in so many minds? I'd like to suggest at least four: memory, sensuality, intricacy, and location.

Memory. Towns and their architecture, as many have noted, embody memory. A city is a memory palace, a place where the streets and buildings function as visual cues, reminding us of our own past and the past of our predecessors. We all have private landmarks. Nobody wishes the obliteration of the corner where he experienced his first kiss. Nobody wants to lose the house in which she first became aware of the world.

When they watch the video, the former West Enders are satisfying a hunger for that kind of memory palace. "That's Dutchie," one says, pointing to a cop on the screen who, long ago, patrolled the West End. They talk about other cops: Casey, McCarthy. Obsessively, they identify buildings and sites to one another.

They also try to rebuild the memory palace. Before it was demolished, the West End contained 21 street corners named for soldiers who died in World War II. The corners were called the "hero squares." At each, a plaque was placed on a building wall; for instance, "Angelo Chester Square," with a gold star above the name. When the neighborhood was wiped out, the plaques came down. West Enders never stopped lobbying for their return. This year, the city finally agreed to erect a new memorial to the soldiers of the West End.

Frank Lavine, 81, puts the case

ontributing editor Robert Campbell is he Pulitzer Prize–winning architecture ritic for The Boston Globe.

pretty clearly. "Those guys gave their lives in the military for what was supposed to be democracy, and there was nothing democratic about the razing of the West End," he says.

The story of the squares is not uncommon. In Tampa, Florida, after World War I, the city created Memorial Boulevard. A sapling tree, carrying a bronze plaque, was planted for each dead soldier. Eventually, as the tree grew, the plaque would disappear inside it. Each tree would be a living memorial to a soldier. A generation later, Tampa widened Memorial Boulevard and cut down all the trees. In 1963, the street was renamed Kennedy Boulevard—not in honor of loved members of a community, but for someone known through the media.

Sensuality. A letter in a recent issue of the *West Ender* contained the following paragraph:

"I used to buy nickel pickles at Klayman's deli and had to sneak around the back of the Blackstone School to eat them since my mother thought a whole pickle would turn my blood to vinegar … I used to love the smell of Cutler's Linoleum store … There was also the tailor shop on the corner of Eaton and No. Russell Streets, Minne White's on Green Street, Gallo's Bakery on Leverett for the Italian bread, Godfried's Bakery for sweets when company came."

The smell of linoleum? The whiff of a tailor shop? These are the Proustian *madeleines* of the West End. The letter reminds us that sensory experience has largely disappeared from our lives, as we limit ourselves more and more to purely visual experiences (or with a headset, aural) that come to us largely from artificial media. You can formulate it as a law: "With every advance in technology, there is a corresponding decrease in sensuality." A good example is transportation. On a horse, you experience rain and sun and wind, you smell the country or the city, you feel your body bouncing in the saddle. On a train, the world shrinks to a visual film strip running endlessly past the windows. On an airplane, the film shrinks further to a mere image on a screen. Maybe in our future spaceships we won't even experience gravity. One of the things that fuels the grieving for the West End is the memory, perhaps half conscious, of a world that was not sensorially deprived.

I'll have to be briefer on my other two qualities.

Intricacy: The West End was dense, and the space between any two things was small. You were always pushed close up to things, whether people or buildings. I think that is one reason why the neighborhood imprinted itself so deeply on the perceptions of its residents.

And *location*: the West End "slum" enjoyed a spectacular location, close to the Charles River and its parks and (then) beaches, close to railroads and subways, close to Boston Common and, just beyond it, the city's main shopping district. When you ask people in a low-income neighborhood what they'd like, they tend to name things they don't have: let's say big-screen TVs and basketball hoops and automobiles. What they often ignore is what they already have, which may be a magnificent location, close to public transit and other amenities—not to mention a low rent and warm neighbors. It is because they are exiles that today's West Enders are so keenly aware of the virtues of what they once had.

Today, if it had survived, the West End would long ago have unslummed itself, to use a term from Jane Jacobs. It would now be gentrified. Former cold-water flats might be million-dollar condos. That is another kind of problem. But at least the West End's physical fabric would survive, continuing to embody memory, sensuality (some, anyway), intricacy, and location. ■

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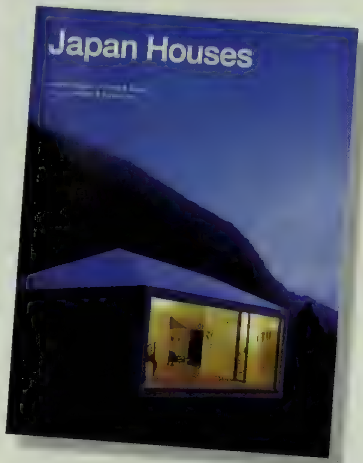
House tours: reading up on residences from around the world

Books

odern Japanese House, *' Naomi Pollock. New York id London: Phaidon, 2005, 28 pages, $75.*

this handsome, engaging book, aomi Pollock does more than st present a group of knockout odern houses in Japan. A special rrespondent for ARCHITECTURAL CORD and a long-time resident of kyo, Pollock places the houses id Japanese residential architec-re in context—historical, cultural, id social. So, instead of merely ing "wow" at a bunch of inventive, egant, and eye-catching designs, e reader learns where the ideas hind the houses come from. The thor discusses the Japanese tion of context in her thoughtful troduction, explaining how it dif-rs from that in the United States Europe. In Japanese cities such Tokyo and Osaka, houses often st only about 20 years. So the mediate physical context for any ew building is constantly changing id therefore exerts very little fluence on design. More impor-nt are the cultural and social ntexts within which the Japanese e, even as lifestyles and mores ange in a country with an aging pulation and a plummeting rthrate.



Pollock underscores these larger sues by organizing the 25 houses in is book by the way they're lived in id used, rather than their style or cation. The five chapters look at the y house, the indoor-outdoor house, e multigenerational house, the ork-and-play house, and the vacation house. Each chapter begins with an essay examining the key issues and trends architects are addressing in the houses that follow. Readers learn, for example, how the traditional *chanoma*—a multipurpose space at the heart of Japanese homes—has become the combined kitchen-dining-living room found in many contemporary designs. Or how the traditional rural house known as *minka* and urban merchants' houses called *machiya* have influenced modern Japanese architects' approach to indoor-outdoor relationships.

The architects presented in the book fall mostly in the emergent generation of practitioners, designers in their 30s and 40s who have established their reputations only in the past decade or so. So Tadao Ando and Toyo Ito aren't included, but Kazuyo Sejima, Jun Aoki, Shigeru Ban, Hitoshi Abe, Taka and Yui Tezuka, Kengo Kuma, and Shuhei Endo are. Stylistically, the selection favors the crisp, clean Modernism of houses like Sejima's tiny House in a Plum Grove and the formal inventiveness of Ban's Shutter House for a Photographer. But you won't find examples from quirky practitioners such as Terunobu Fujimori, who creates neoprimitive houses that have grasses growing from the roof, and walls made of wattle and clay.

Many of the architects shown in this book are starting to do work outside of Japan and are contributing to a globalization of architecture. "Houses, however, remain particular to place," writes Pollock. "Unique microcosms molded by local customs and social mores, the houses of one country are still distinct from those of another." *Modern Japanese House* does an excellent job presenting and explaining designs from a country famous for being distinct. *Clifford A. Pearson*

Japan Houses, *by Marcia Iwatate and Geeta K. Mehta. North Clarendon, Vt.: Tuttle Publishing, 2005, 240 pages, $50.*

Like Naomi Pollock's book (review above), *Japan Houses* offers a collection of beautiful modern houses from the past 10 years, all given the glamorous, art-book treatment. The 26 houses look great.

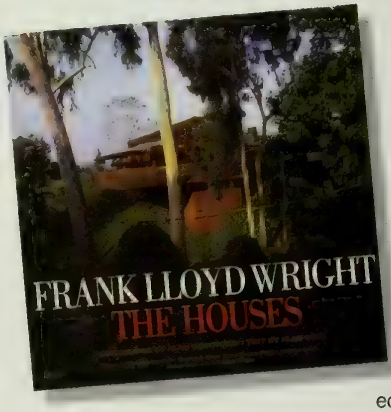
Although the two books cover the same ground geographically and stylistically, only one house—Zig/Zag by Nobuaki Furuya's firm NASCA—finds its way into both. This lack of overlapping material points to the remarkable depth of architectural talent working in Japan today.

While *Japan Houses* provides a visual feast with gorgeous photography by Nacása & Partners, it doesn't deliver the depth of understanding or analysis that Pollock offers her readers. The introduction by Mehta relies too much on generalities, such as, "A home is, above all, an opportunity for deepening our living experience," and too little on particulars that support such statements. The authors don't provide any thematic framework, so the houses follow one after another in no particular order.

The quality of the houses, though, is uniformly high, with examples by Manabu Chiba, Jun Aoki, Taka and Yui Tezuka, Makoto Tanijiri, and Makoto Shin Watanabe & Yoko Kinoshita. The book also provides a useful index of the architects, including contact information, selected projects, and short biographies. *C.A.P.*

Frank Lloyd Wright: The Houses, *by Alan Hess, with Kenneth Frampton, Thomas S. Hines, Bruce Brooks Pfeiffer, Alan Weintraub (photographer). New York: Rizzoli, 540 pages, $75.*

If all the books written by and about Frank Lloyd Wright were placed end to end, they would reach from here to, well, Taliesin. Among them are biographies (by Ada Louise Huxtable, Meryle Secrest, Brendan Gill, Wright's daughter Iovanna, and his wife Oglivanna); treatises on Wright's design and theories (by Vincent Scully, Peter Blake, and Henry-Russell Hitchcock); collections of his writings and drawings; and books about his early years, the Japan years, the lost years, the lost buildings—not to mention books about his interiors, furniture, stained glass, screens, and fireplaces.



Enter Rizzoli, with a new doorstop of a book called *The Houses*. It is outstanding, carried largely on the merits of Alan Weintraub's color photographs and a level of reproduction that does them justice. In most of the exterior shots, long shadows emphasize the architecture's ground-embracing forms, just as Wright intended. Yet, it is the quality of lighting in the interior photos that is most impressive. Supplemental light sources are nowhere apparent, yet the dark areas retain sufficient information to avoid photo black, as they call it in the printing trade. Plans of 20 representative houses, reproduced on four pages at the back of the book, are astonishing in complexity and variety. Those pages are followed by a list of houses dating from 1889 to 1961, many of the entries accompanied by thumbnail photos that explicate Wright's creative proficiency.

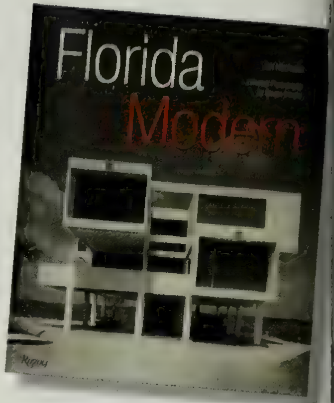
Alan Hess's explanatory essays frame the work in meaningful eras and categories. Essays by familiar names, including Kenneth Frampton, Thomas S. Hines, Bruce Brooks Pfeiffer, and Wright's great-grandson Eric Lloyd Wright, are mostly just about right. *Allen Freeman*

Florida Modern: Residential Architecture 1945–1970, *by Jan Hochstim, New York: Rizzoli, 272 pages, $55.*

Florida's fragile, elegant early Modern architecture has been comparatively uncelebrated, even in a period of intense interest in the decades immediately following World War II. The notable exception was, of course, Paul Rudolph, who lived in Sarasota in 1940 and 1941 and returned after the war to produce works of enormous delicacy and delight before leaving in 1958 to become dean of architecture at Yale. The Sarasota School (as it came to be called) eclipsed inquiries into other postwar architecture in Florida.

Jan Hochstim's *Florida Modern*, with a fine selection of contemporary photographs by Steven Brooke, goes far to redress the oversight. Hochstim, a professor at the University of Miami School of Architecture, notes that the postwar Florida house did not necessarily "reflect the prewar European concern for social significance and functionality," but rather, it was based on a fierce desire to experiment with materials and forms responsive to a hot and unyielding climate. Thus came houses with deep, overhanging flat roofs, louvered windows, and cross ventilation. Before air-conditioning became the norm, houses were wrapped around courtyards or ensconced within a larger screened enclosure, as in Igor Polevitsky's 1949 Birdcage House.

These houses are finally getting their due. Many that survived have owners committed to preserving them. Hochstim has documented almost 100 houses in his statewide study, which is enhanced by informative text and an appealing design, itself an ode to the graphics of the era. *Beth Dunlop*



Modern American Houses: Fifty Years of Design In Architectural Record, *edited by Clifford Pearson. New York: Harry N. Abrams, 2005, 296 pages, $50.*

Modern American Houses is an honest book. Neither a museum exhibition catalog freighted with bold (and potentially overreaching) polemics, nor a drool-inducing, fruit-bowl-laden fancy-house extravaganza, it turns a selection of projects from 50 years of this magazine's annual *Record Houses* issue into a reflection on the evolution of residential architecture.

As in an old high school yearbook, among these houses are some funny haircuts and some staggering beauties. But original photography and project texts and an acknowledgment of historical tastes in the selection of projects (however embarrassing they may seem today) allows the book to reveal the magazine's surprising trepidations and enthusiasms over the past 50 years. For example, about Ulrich Franzen's 1956 house for his family in Westchester, the editors wrote, "We must admit that occasionally we are startled by its daring." Today it would be totally at home in the pages of *Design Within Reach*. Conversely, Allan Greenberg's 1986 Mt. Vernon-inspired farmhouse in Connecticut gets an enthusiastic pass in its project text by Paul Goldberger, if only because its Andy Warhol portrait of Marilyn Monroe above the mantel "prevents this house from becoming cloyingly 'Colonial.' "

But in all the projects, and in the short decade-by-decade essays, a consistent theme emerges. There are undoubtedly some blips, but *Modern American Houses* makes the clear argument that the story of residential architecture since WW II describes the triumph of Modernism. *Andrew Blum*

Art/Invention/House, *by Michae Webb. New York: Rizzoli, 2005, 320 pages, $75.*

Drive through almost any affluent suburb and you may conclude that most rich people aspire to be Donald Trump. Architectural journalist Michael Webb here provides an antidote for such gloom, showing 40 new and recent houses by good and great architects.

Each of the houses—most in North America and Europe, plus scatterings in Australia, Japan, Mexico, and Brazil, and one each in Ecuador and China—seems rooted in one or more of Modernism's strains. Charles Gwathmey's white house in Marin County, though tailored to suit a precipitous slope, looks as Corbusier-rational as the one Gwathmey designed for his parents 40 years ago on Long Island. Also in Marin, Arizonan Will Bruder shows his understanding of

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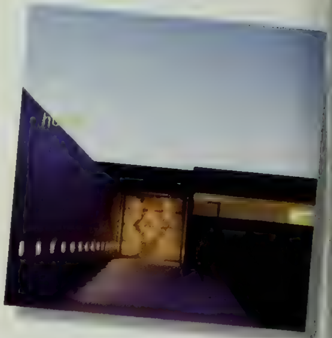
Bay Area Modernists Maybeck and Esherick (Webb's observation). And out from London, Graham Phillips, Norman Foster's managing director, convincingly displays white Miesian Minimalism in a Wrightian pinwheel plan.

Webb shows that industrial materials are still hard at work on a domestic scale, even on larger budgets, as in New South Wales, where Glenn Murcutt's 80th house, at 6,000 square feet, is as robust as his much smaller ones from the 1980s. Similarly, audaciously concocted plans remain alive, as in Brookline, Massachusetts, where Atlantans Mack Scogin and Merrill Elam slammed together conflicting ideas with seemingly cohesive results.

Webb shows a steady eye and a clear head for writing. Each house gets a graceful little essay of relevant facts. The book design is low-key and reader friendly, including plans and occasional conceptual sketches. Some of the photos are pushed a little beyond their digital capacity, but that's a minor drawback in a very good book. *A.F.*

Compact Houses: Architecture for the Environment, *by Cristina Del Valle. New York: Universe Publishing, 2005, 420 pages, $29.95.*

As the size of new homes bursts the boundaries of good sense and sensitivity, this study offers 50-plus compact houses, their small spaces designed efficiently and with flair. Ingenious solutions that make spaces look larger and include furniture doing double duty—seats containing storage space, closets hidden in wide walls—are particularly valuable in cities where land is scarce and costly. Hence many of the book's urban houses are in Japan. In Tokyo, for example, the 720-square-foot Slit House by C Matsuba/Tele-Design combines traditional and contemporary materials and has roll-up and folding exterior bamboo screens over translucent cladding, providing visual interest and privacy. Still smaller is Hiroaki Ohtani's 355-square-foot Layer House in Kobe, built of widely separated horizontal boards admitting diffuse light. But in Vienna, for example, there's Thaler, Thaler Arkitekten's Haus P, a 1,076-square-foot residence with an interior patio that brings light and a feeling of space into each room. Del Valle points out that in



nonurban situations, smallness often yields unconventional solutions, as with Cooperativa Uro1.org's mass-produced, inexpensive M7 prototype in Valparaiso, Chile, and Hans-Peter Lang's residence for Claudia Bruckner in Rankweil, Austria, that maximizes space by varying ceiling heights and surface levels within a single area. The book also showcases additions, cottages, and houses that can be opened to expand into the landscape. The text is short, the pictures descriptive, and the book an appropriately compact 8 by 8 inches square.
Andrea Oppenheimer Dean

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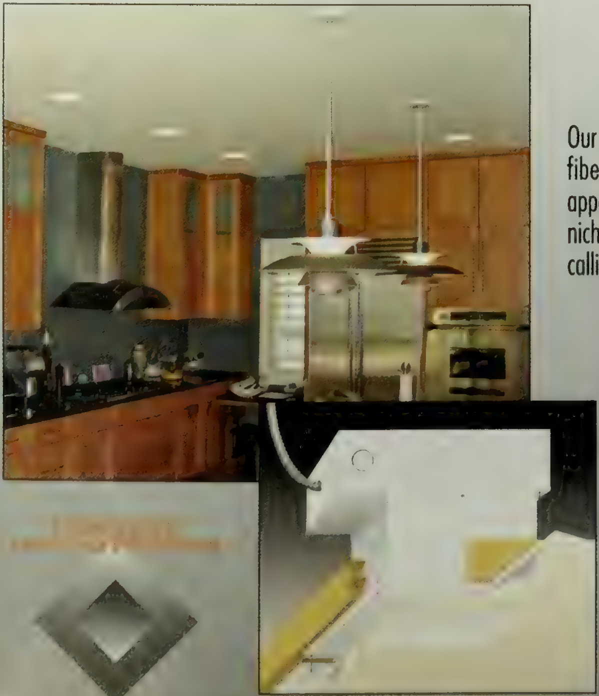

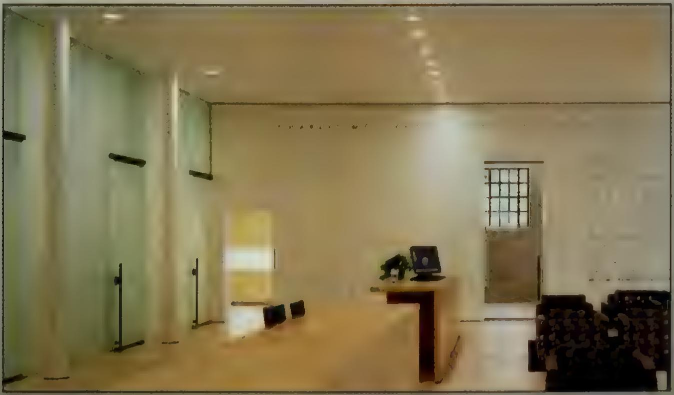

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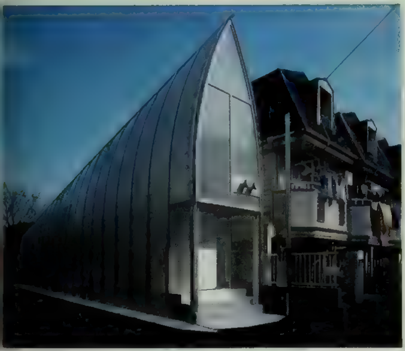
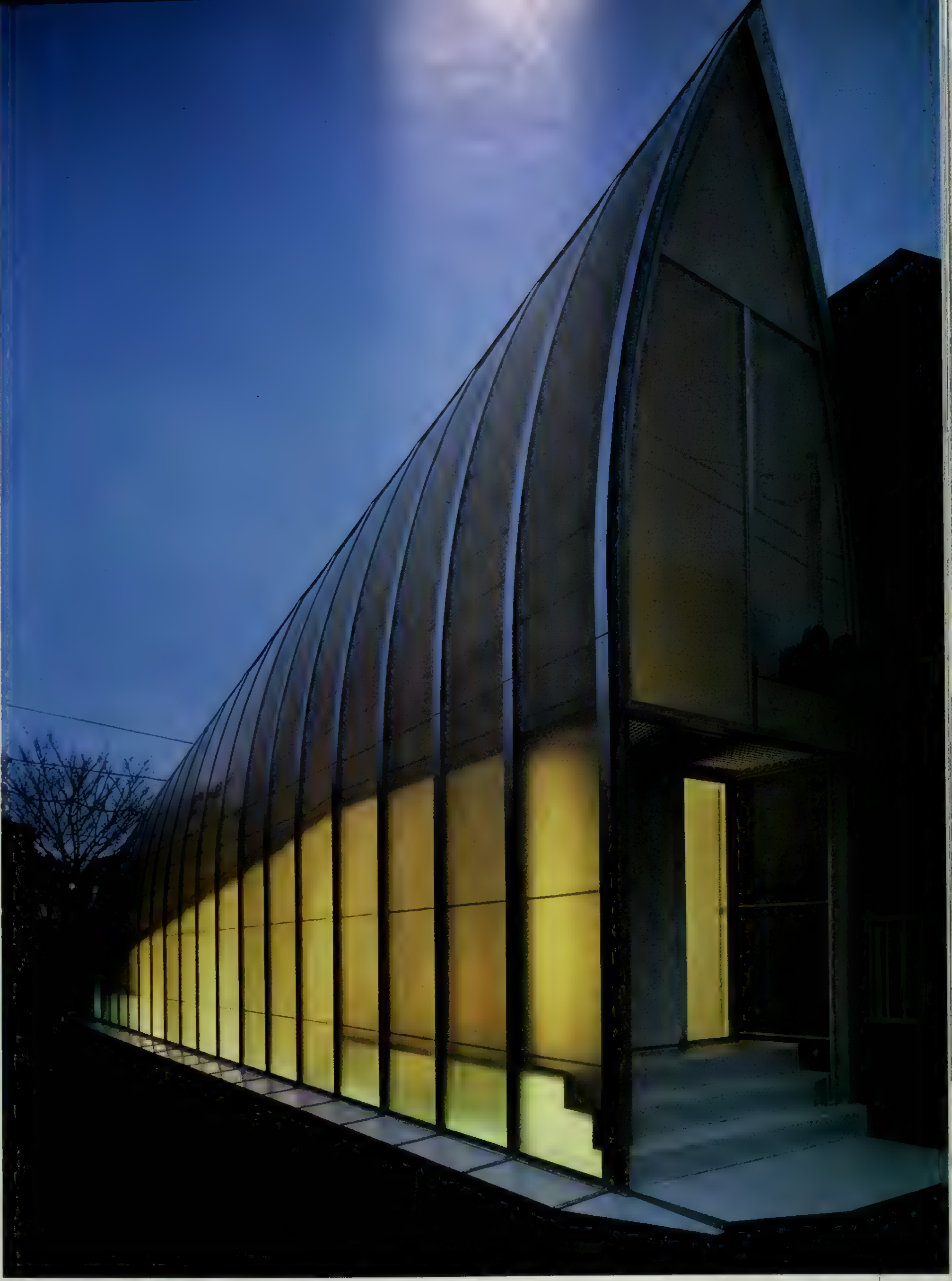
Snapshot



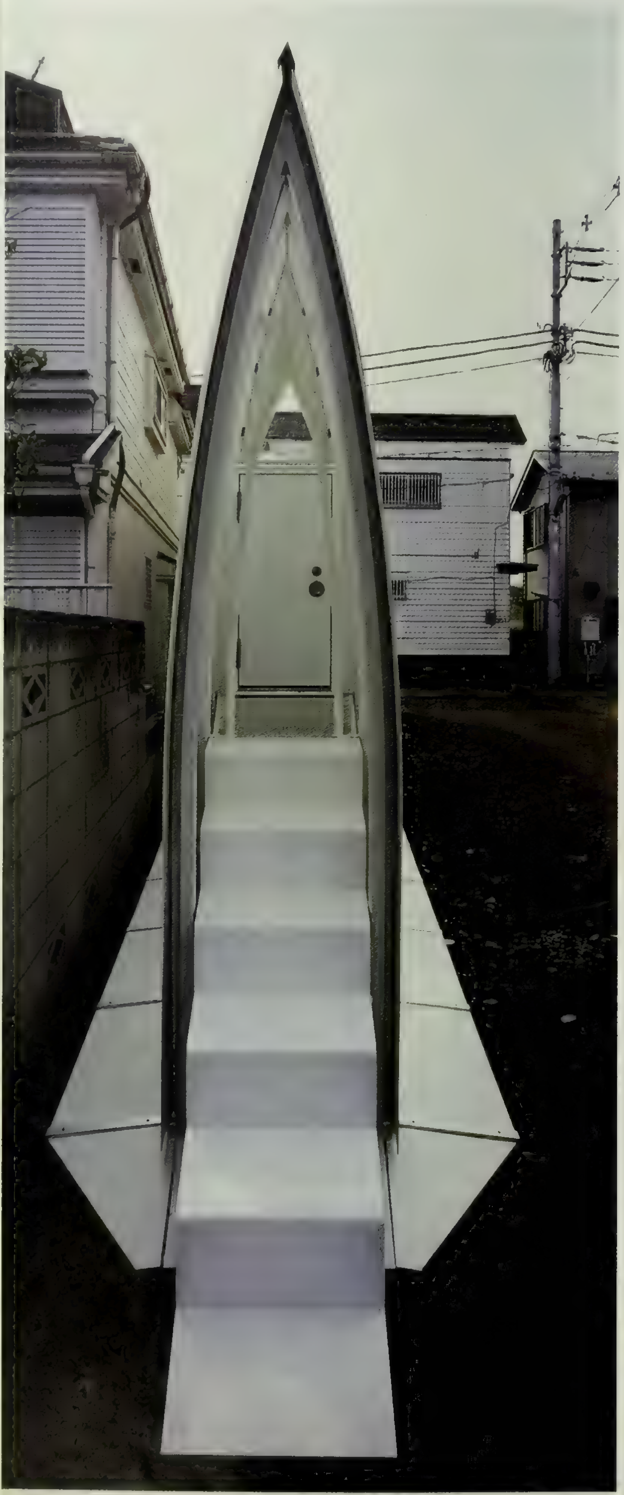


y Naomi Pollock

Neo-Gothic arches soar over a mere sliver of a site

Tokyo, where property values are among the world's most exorbitant, ealous homeowners build on just about anything. But the sliver of land in iburban Tokyo proposed by a 30-something couple for their future dream ouse gave pause even to avant-garde architects Yasuhiro Yamashita and asahiro Ikeda. "My first reaction was that they ought to ask for a price duction," says Yamashita, chuckling. His second reaction was Lucky Drops: a 98-foot-long, tapered tube of space, efined by a taut, reinforced-fiberglass skin and a skeleton of 20 pointed steel arches.

Since Gothic arches evoke cathedral architecture, these pointed forms give Lucky Drops a whiff of grandeur, specially where the tallest arch soars to 20 feet and frames the front door. But just beyond the threshold, that npression quickly vanishes. The view from the entry foyer, set on a metal-mesh platform, extends all the way to ie other end of the 237-square-foot dwelling. In this single, continuous space, the living area, kitchen, and glass-nclosed bathroom line up submarine style. Setting the floor level about 4 feet below grade enabled the designers

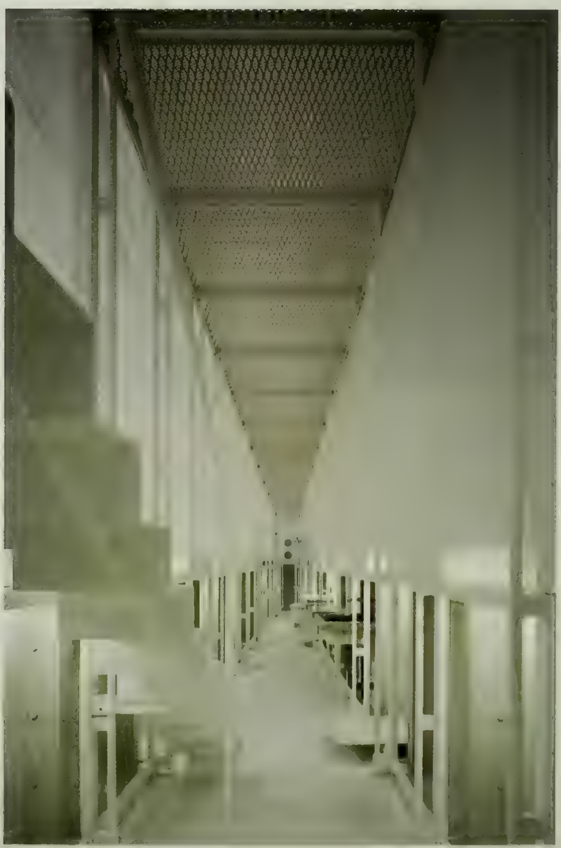


to insert a loftlike sleeping area overhead. It leads into a long storage space that slopes down to the back door, where the house narrows to a mere 3 feet across. The upper level's metal-mesh floor lets light, air, and sound filter through while also acting as a flat brace to stabilize the structural ribs.

Besides capitalizing on the site's length, Yamashita and Ikeda made the most of its width. Dropping the floor level enabled them to circumvent the bilateral, 1.5-foot setback requirements, which do not apply to construction below grade.

The house's most astonishing space-saving device is its 0.12-inch-thick, milky white exterior wrapper, which includes a layer of translucent fiber insulation. Like shoji screens, the fiberglass membrane diffuses daylight, allowing soft rays to bathe the interior. This luminous quality comes at the cost of views, but provides a good trade-off since the neighbor's home stands only a few feet away.

In most American cities, such a tiny strip of land would have had little value. But the words *lucky drops* are the English equivalent of the Japanese for "saving the best for last"—and, as the name of this house attests, even leftover bits can become catalysts for invention. ■



The taut fiberglass skin glows from within at night (previous page, right). Lucky Drops contrasts strikingly with its far more conventional neighbors (previous page, left). The tube of space narrows to only 3 feet across at back (far left). Inside, the house presents a single, continuous space (left).

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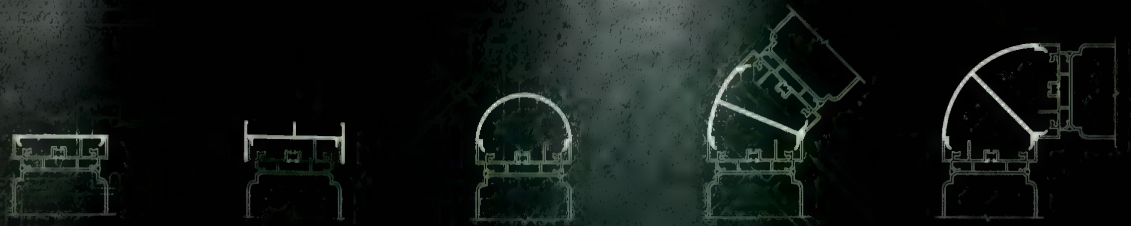

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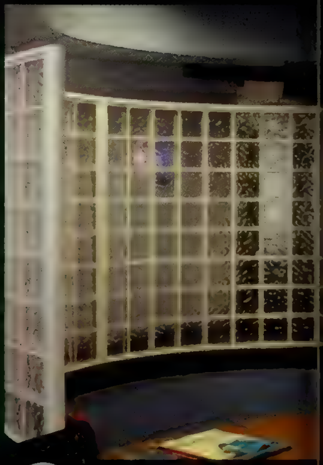

Round caps finished off the ends of th
perfectly. Aluminum mulls were used
the three radius walls together, whil
mounted the units to the top of the

90-degree corner caps were used to connect [illegible] acrylic block panels together to form deco- [illegible] towers. The panels were mounted to the base and top piece with flat caps.

Aluminum mulls were used to connect
panels and radius walls together. A fla
mounting channel were used to mou
the base and the walls. Flat caps we
to connect the desktop to the top o

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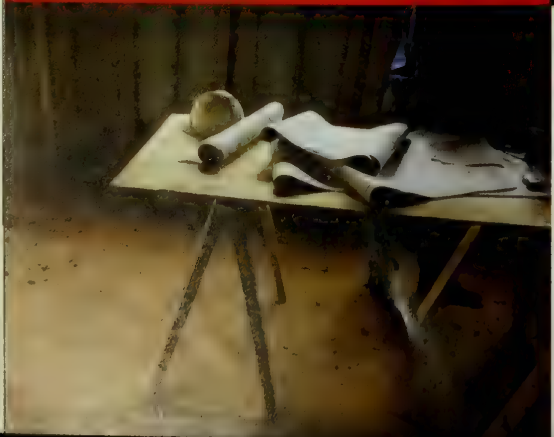

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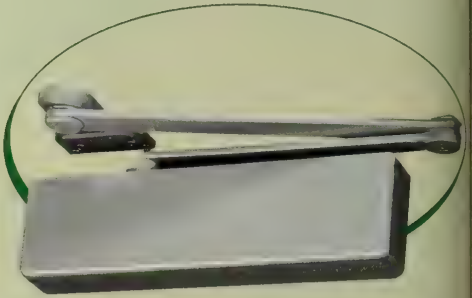

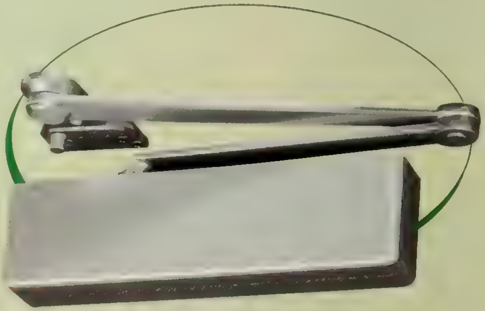

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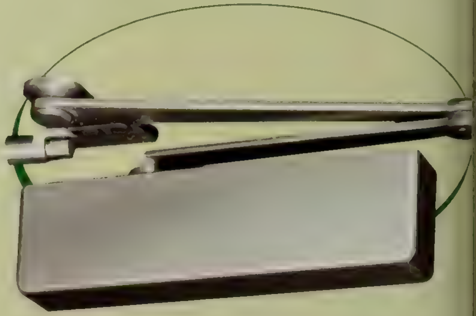

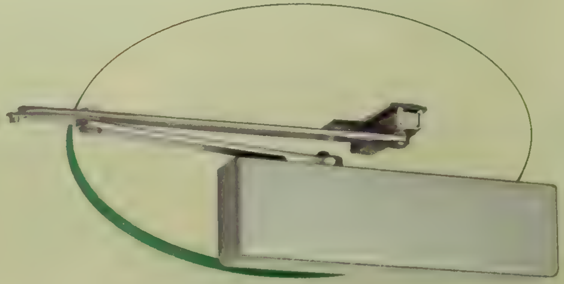

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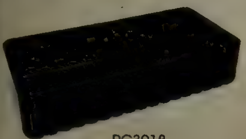
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Record Houses 2006

Cascading down a steep slope—with a rush of terraces, concrete volumes, and a pool of water that spouts over the edge—Casa Tóló could be nowhere else. Here, in Vila Real, Portugal, archiect Álvaro Leite Siza Vieira has fit a house to the unique contours of its recipitous topography.

Throughout Record Houses 2006, each project reveals trong links to its particular place. In the eight featured dwellings, ulled from four continents, the connection may be primarily through ulture, climate, landscape—or a combination of influences.

At Javier Artadi's Las Arenas Beach House, on the starkly arid oast of Peru, pure, crisp, white concrete forms stand in the sharp sunght—opening the architecture literally and figuratively to outdoor living in this warm climate. Meanwhile, Olson Sundberg Kundig Allen's Stilt Cabin, a treehouselike hideaway of raw steel and plywood, rises like a sapling—completely at home against Washington's Cascade Range.

In the countryside near Tokyo, Kengo Kuma's Lotus House, with its improbable checkerboard screen of thin travertine panels, captures the delicate floating quality of lotus flowers on a pond. This unusual house could exist only in Japan. Though Maya Lin's Box House, set in the Colorado Rockies, also has a sheer outer screen, it abstracts nature differently, echoing the dappled light that filters through surrounding aspens. At the same time, its windows frame a spiraling array of views out to the peaks.

Responding to an existing "village green" on the site of New England House, Office dA reinterprets—and inventively transcends—the local vernacular. In another farm-related setting, a vast stretch of dairyland in rural Wisconsin, Wendell Burnette's Field House looks as quiet and comfortable as the metal farm structures dotting this landscape. A modest and inobtrusive insertion, Burnette's elegantly simple, aluminum-clad box ultimately reveals a level of subtle refinement. And finally, Studio Blank's Xeros Residence, in Phoenix, addresses its desert climate with intentional ambiguities between indoors and out. Formally, the building's rusted "veil" has a strong Modernist character while also evoking the old farm equipment weathering along local roadsides.

The sense of place has a powerful presence in each of these houses—be it in Portugal or Peru, the Pacific Northwest or Japan, Colorado or New England, Wisconsin's dairy country or Arizona's desert. Through this rich and varied collection, we invite you to embark with us on a little world tour. ■

Artadi Arquitectos
Olson Sundberg Kundig Allen
Kengo Kuma
Maya Lin Studio
Office dA
Wendell Burnette
Álvaro Leite Siza Vieira
Blank Studio

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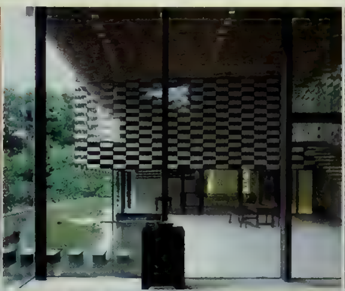

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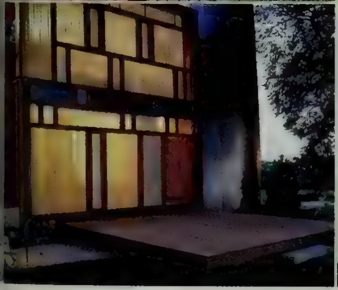

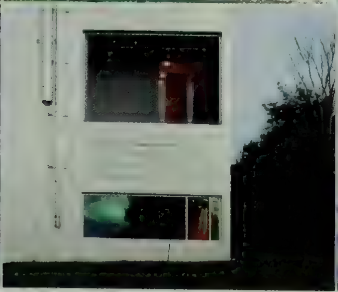

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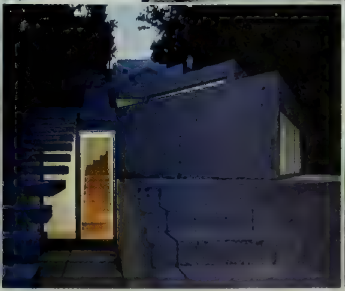

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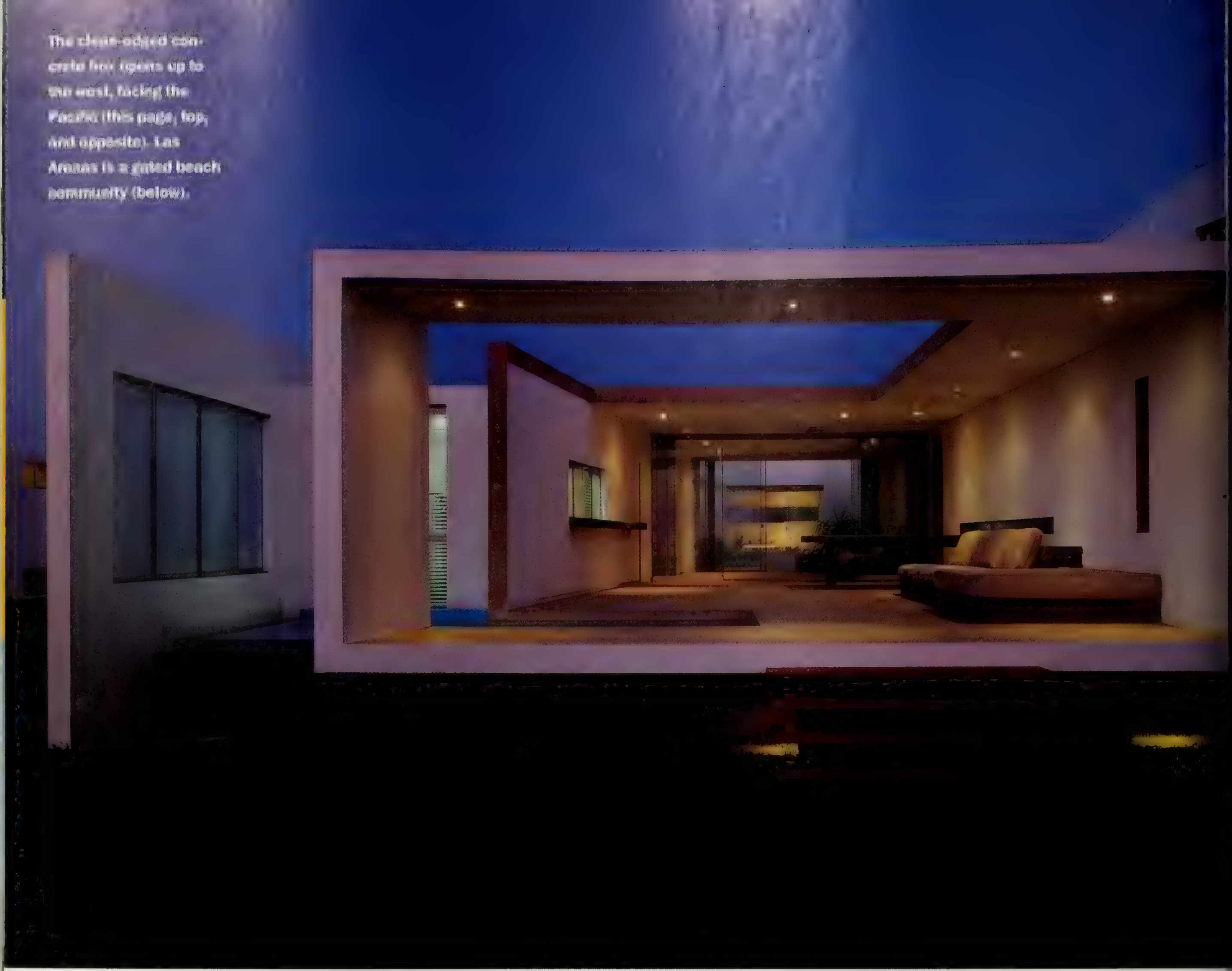
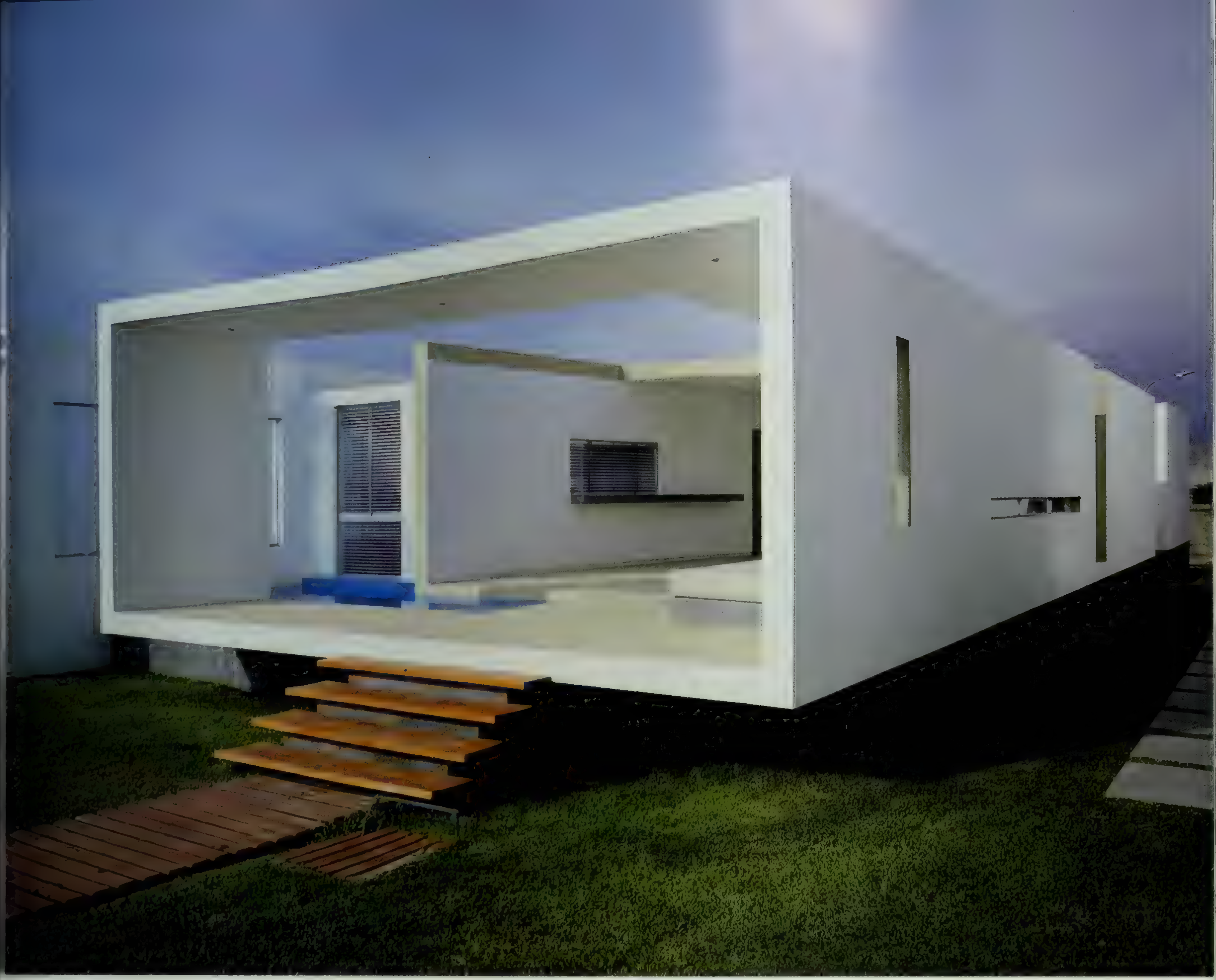


The clean-edged concrete box opens up to the west, facing the Pacific (this page, top, and opposite). Las Arenas is a gated beach community (below).

On the arid coast of Peru, Javier **Artadi** gives the Modernist white box a crisp new edge in LAS ARENAS BEACH HOUSE



y Raul A. Barreneche

Rain almost never falls on the Peruvian coast just south of Lima, the northernmost stretch of one of the driest spots on earth: the Atacama Desert. In this arid landscape, barren mountains and sandy cliffs hover above the Pacific. Beneath a vast, glaring sky, ie startlingly empty, alien terrain—with not so much as a cactus on the ·ound—makes anything built here look like a brusque intrusion. Still, ited communities crowd this inhospitable coast, as *Limeños* buy up dusty ots to build weekend escapes at the beach. In one such development, Las renas, 60 miles south of the capital, architect Javier Artadi has created a ouse of pure, Minimal, almost simplistic forms—carved-out, white con-ete boxes—that belie a complex attitude toward the setting.

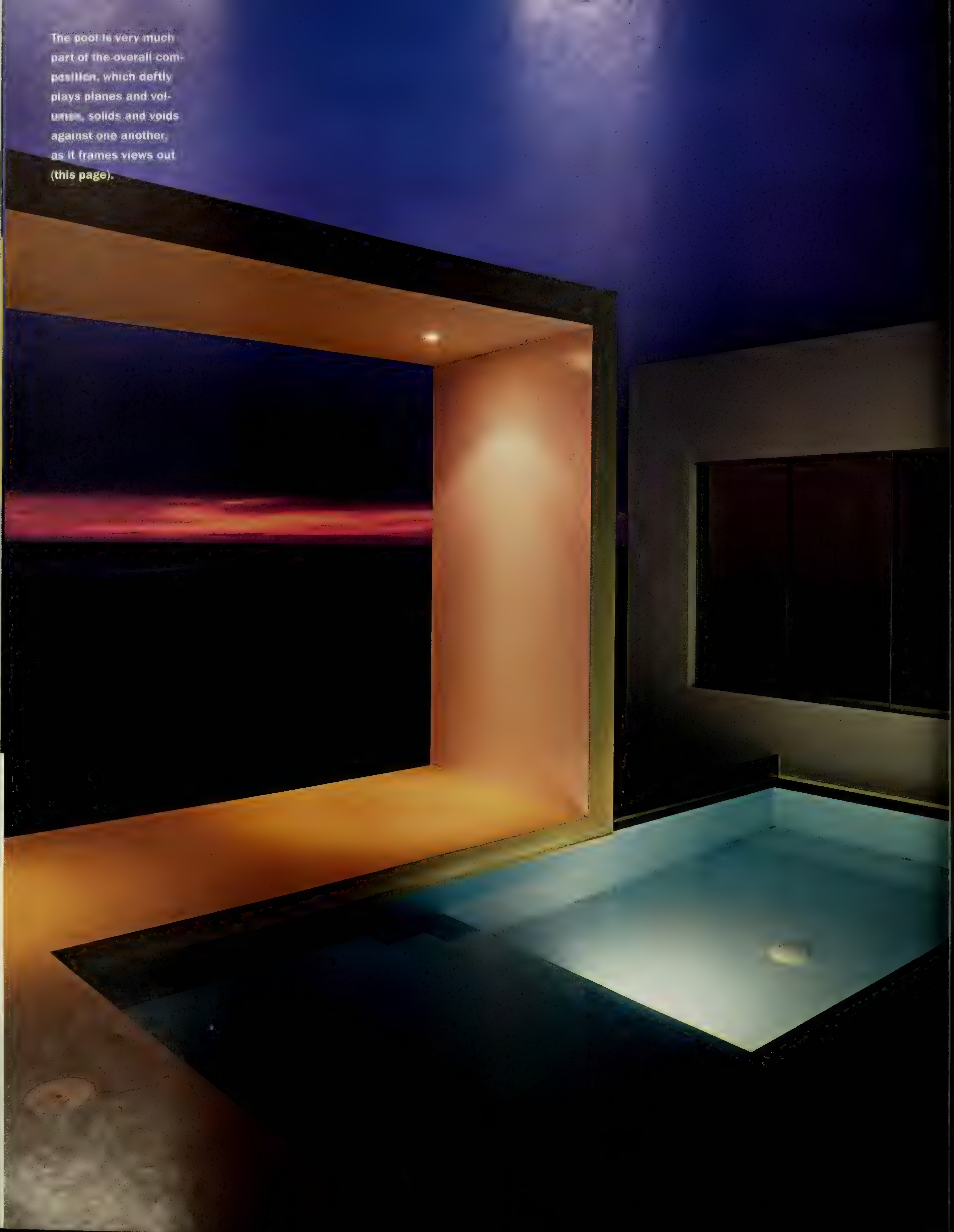
By cantilevering the white boxes over a dark gray terrazzo plinth, rtadi detaches the single-story house from the ground plane, letting the rms float visually. At the same time, he brings the beach inside metaphor-ally, with sand-colored concrete floors. "The idea was to reinvent the beach chitectonically," suggests Artadi, an amateur surfer. Opening the house to outdoor living, he "folded" planes of concrete to demarcate roofs, walls, and floors, subtly jogging the whitewashed surfaces to define shady outdoor rooms, expose a partially cantilevered pool to the sun, and strategically frame views of the broad Pacific panorama. The house becomes an open-ended container that captures sky and horizon within a single volume.

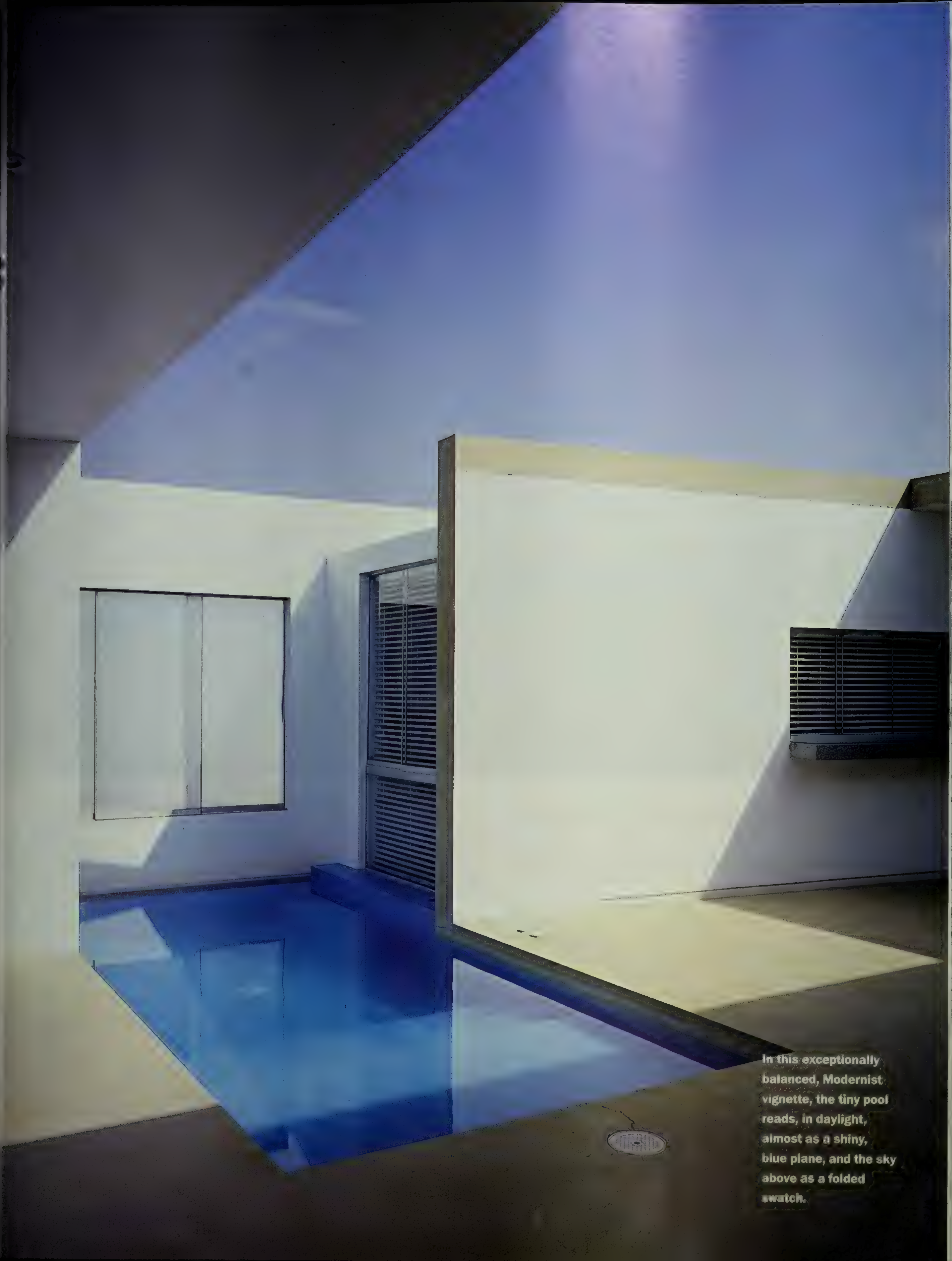
Artadi, a professor at the Peruvian University of Applied Sciences and a principal of the seven-person firm of Artadi Arquitectos, both in Lima, designed the 2,300-square-foot house for a city-dwelling couple and their three children. The property—a flat, 2,400-square-foot, artificially grassy parcel—came with design restrictions, stipulating that the facades could not be concrete, only of wood or other "soft" materials. That didn't stop the architect from breaking the rules. "Luckily, I knew the board members," jokes Artadi. In reality, Las Arenas's governing body—akin to a co-op board—granted a variance to his design, which, the architect suggests, "sets

ontributing editor Raul Barreneche's next book is Pacific Modern *(Rizzoli, 2006).*

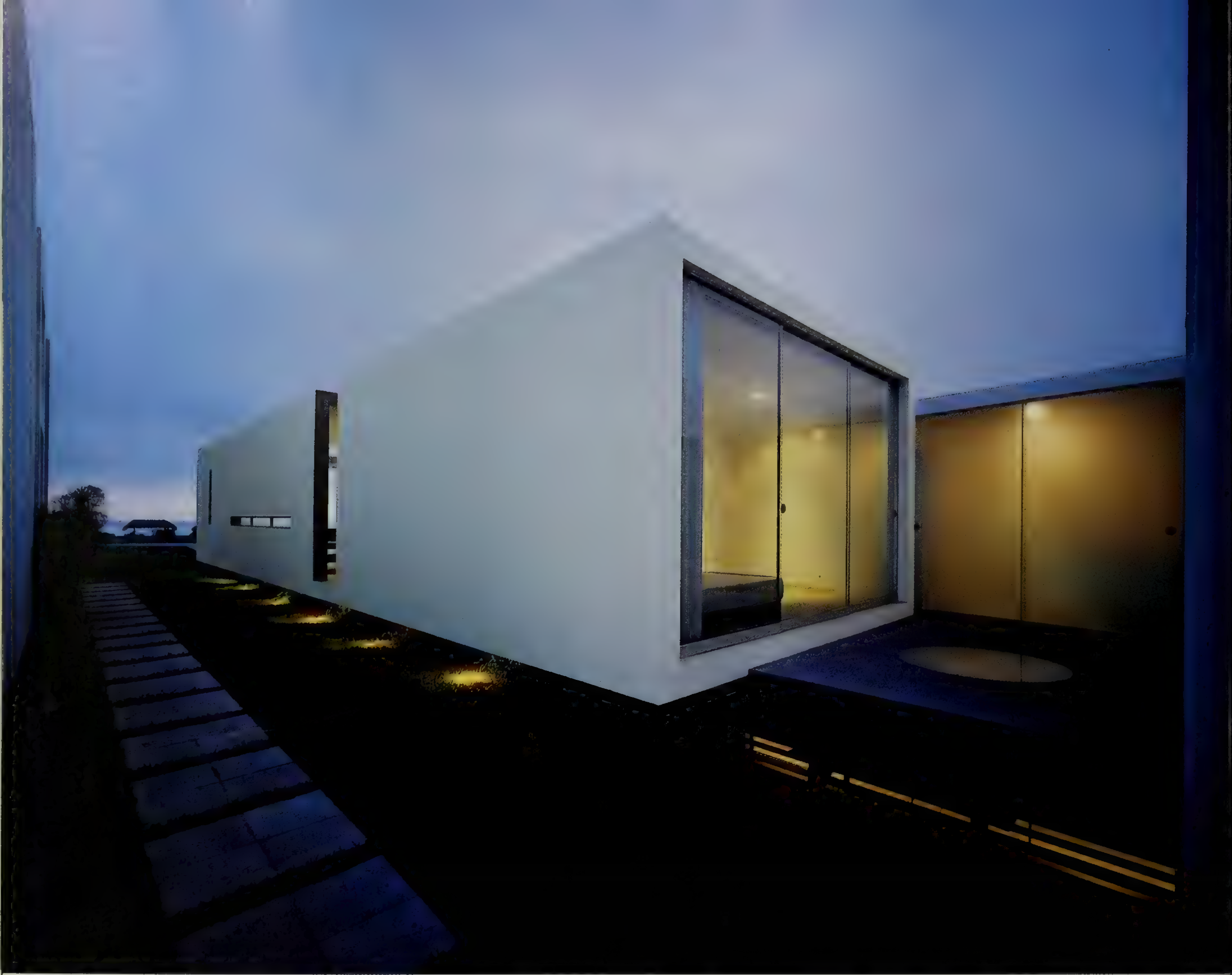
Project: *Las Arenas Beach House, Peru*
Architect: *Artadi Arquitectos—Javier Artadi, principal; Oscar Luyo, project manager; Ivan Navas*
Engineers: *Jorge Indacochea, Rigoberto Mayorga, Angel Dall'Orto*

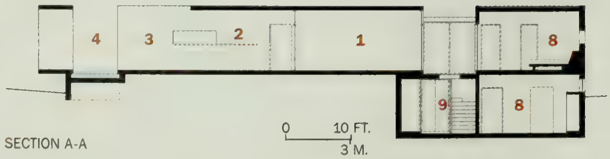
The pool is very much part of the overall composition, which deftly plays planes and volumes, solids and voids against one another, as it frames views out (this page).





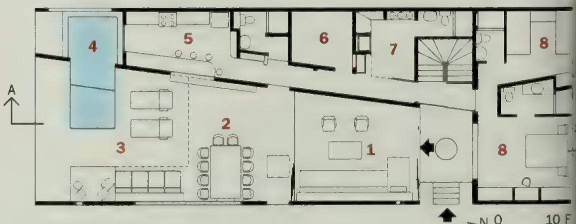
In this exceptionally balanced, Modernist vignette, the tiny pool reads, in daylight, almost as a shiny, blue plane, and the sky above as a folded swatch.



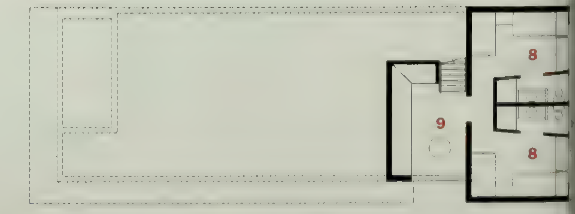


SECTION A-A

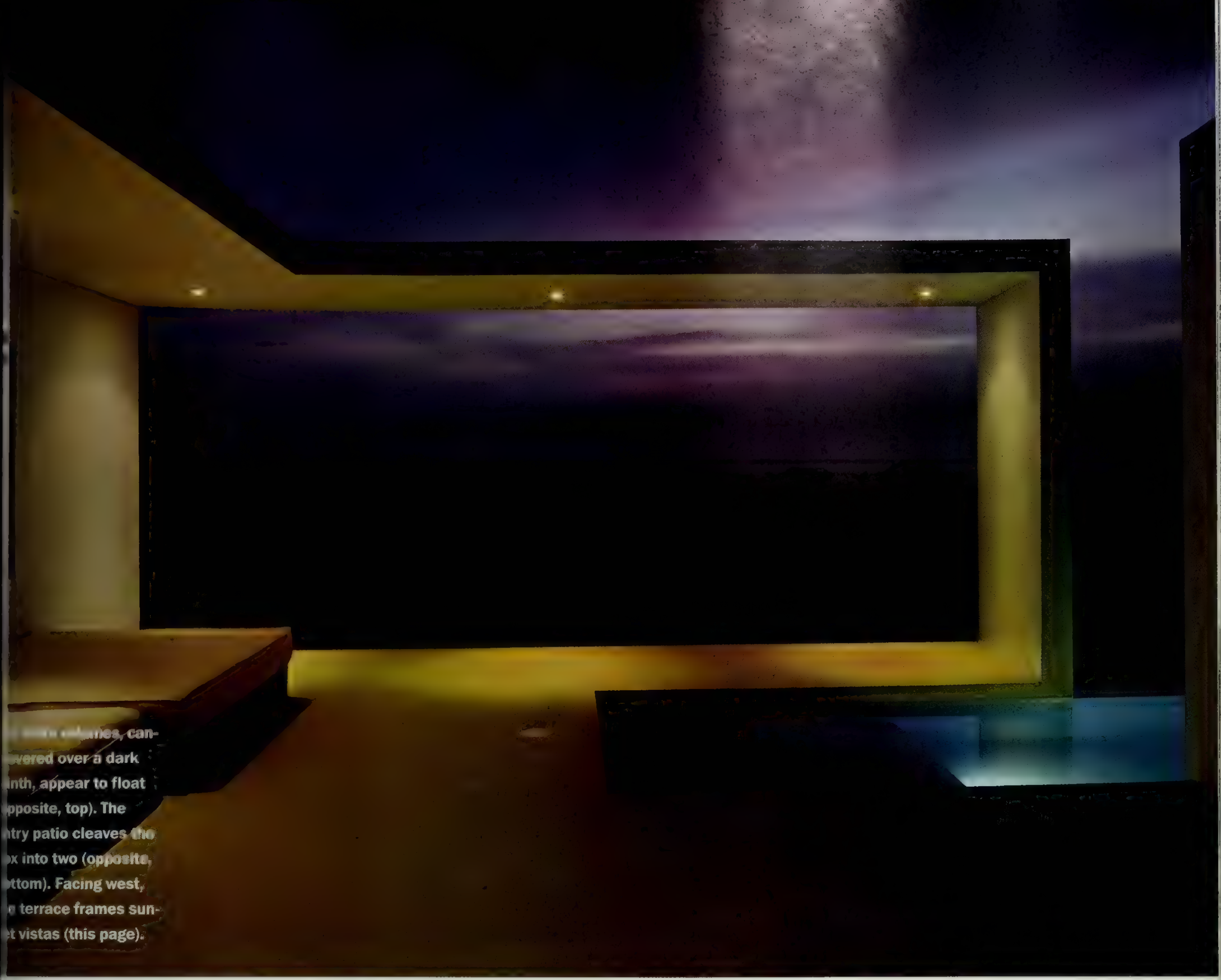
1. *Living*
2. *Dining*
3. *Terrace*
4. *Pool*
5. *Kitchen*
6. *Storage*
7. *Laundry*
8. *Bedroom*
9. *Den*



TERRACE LEVEL



UNDERGROUND LEVEL



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t vistas (this page).

precedent for other possibilities for the community."

The directors may have been swayed by the house's visual light- ess, especially the svelte concrete frame that defines the oceanfront facade. his form, a clean-edged rectangular tube, wraps a combined pool deck and utdoor living/dining area. Inside, the slightly more formal living room has iding glass doors that can screen off the space or open it to the spatial flow. rtadi allotted half of the ground floor to the communal zone, but limited e size of sleeping areas. "At the beach," he points out, "you tend to wake up ith the sun and go to bed late after socializing, so you spend little time in e bedroom." To encourage informal lounging and dining throughout the ay, he built concrete benches along the living/dining area's south wall, with versize cushions and a terrazzo-covered concrete dining table.

A skewed corridor separates the communal areas from the itchen and servants' quarters, which extend along the house's north flank. he skew creates a forced perspective, amplifying the sense of space and eightening views out. The master suite and guest bedroom anchor the ouse's east end, where a partially excavated basement adds two children's edrooms and a den. Sunlight reaches the lower level through a large cir- ular disk or skylight, set into the entry patio, which Artadi notched into e house's south side, cleaving the master bedroom from the living area.

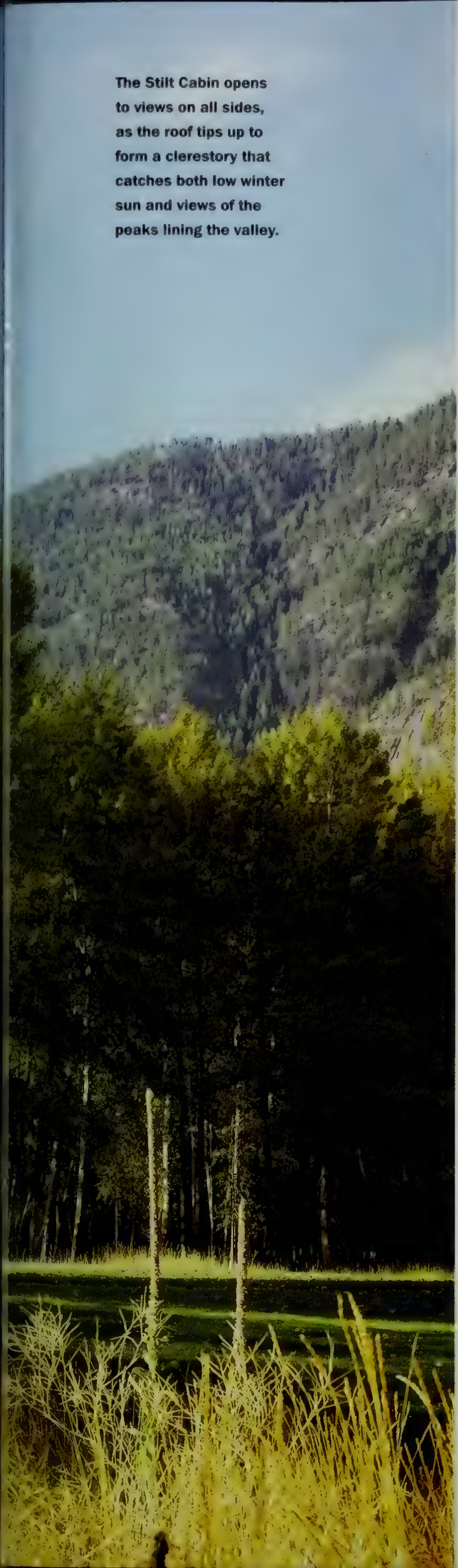
Despite its formal complexity, the house demonstrates considerable economic restraint. Construction came to just $60,000, thanks to low-cost, high-quality workmanship with a straightforward palette of poured-in-place concrete, terrazzo, spray-on concrete floors, and little else.

In a developing country like Peru, such a commission takes on significance beyond the notion of house as design laboratory. "Here, there's still a sense that we can build the future through modern architecture," Artadi says. The power of this little building transcends the optimism of aggressive Modernism in arid Third World environs. Formally, the design's quiet sophistication and finesse go beyond the modest construction. Playing with the white box, Modernism's sacrosanct archetype, Artadi subtly folds and cuts into the volume, at times emphasizing its planar quality, and at others its solid geometry. In places, a simple edge and bent plane deftly imply a larger volume. The eloquent language of solid and void, mass and space speaks to a thoughtful Modernism—at home anywhere in the world. ■

Sources

Paint: *Sherwin Williams*
Lighting: *Light Line*
Tiles: *Celima*

For more information on this project, go to Projects at **www.archrecord.com**.



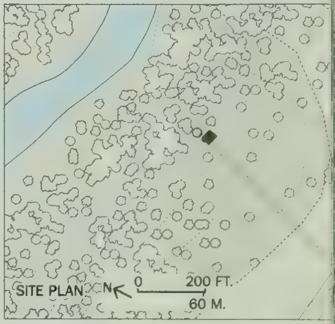
The Stilt Cabin opens to views on all sides, as the roof tips up to form a clerestory that catches both low winter sun and views of the peaks lining the valley.

PHOTOGRAPHY: © BENJAMIN BENSCHNEIDER, EXCEPT AS NOTED

In Washington State, **Olson Sundberg Kundig Allen** sets its tiny **STILT CABIN** amid the Methow Valley's four-season splendor

James S. Russell, AIA

In the Methow Valley, which fissures deeply into the eastern slopes of Washington State's Cascade Mountains, a couple of weather-beaten utility buildings, a barn—steep-roofed to shed snow—and a plain farmhouse mark the 50-acre setting for Stilt Cabin. From the North Cascades Highway, the drive winds through a layer of white-skinned aspens, then a dark thicket of pine and fir, followed by a veil of scaly cottonwoods covered with wire-brush branches. It finally opens to a frontal view of the two-story pavilion, poised on thin columns, like a gangly wading bird, alert to any disturbance.



Stilt Cabin was designed to survey its surroundings. On its two habitable levels, half of each elevation is glass; unpainted steel clads the rest. The ground floor encloses only storage, a laundry room, and mechanicals because the house rises on a 50-year floodplain. A welded and bolted frame of wide-flange sections holds the whole structure together. Through the glass, the diagonal of the stair is visible, along with the planes of bleached plywood that enclose the kitchen on the uppermost level, and sleeping and bath areas below it.

Together, the two upper levels enclose a mere 700 square feet of livable space. It's a getaway that perfectly suits Michal Friedrich, a Seattle dentist. "In Poland, where I grew up, I lived with my two sisters and my parents in a 60-square-meter [645-square-foot] apartment," he explains. "So a small house is okay with me." He also speaks of his home country's tradition of dachas—summer cottages in the woods, typically half the size of Stilt Cabin—that are shared by entire families. In such close quarters, "you'd better like each other," he cautions.

"I wanted something tiny, only a bedroom or two, a bath, a small toilet room, and a real fireplace, so I can hear the wood crackle," says Friedrich. Before commissioning the cabin, he was drawn to Chicken Point, a house Tom Kundig, FAIA, of Seattle-based Olson Sundberg Kundig Allen,

Project: *Stilt Cabin, Mazama, Washington*

Architect: *Olson Sundberg Kundig Allen—Tom Kundig, FAIA, Ellen Cecil, Debbie Kennedy*

Engineers: *Monte Clark Engineering (structural); Turner Exhibits (shutter engineer)*

General contractor: *Tim Tanner*

Planes of glass open on all four sides to views (plans, below), capturing the ever-varying light, as well as the seasonal changes (right). Operable steel-plate panels slide into place to close up the cabin entirely (bottom right).

had designed. There, a huge, upward-pivoting, glass-and-metal garage-style door brings a serene water view virtually inside the living room.

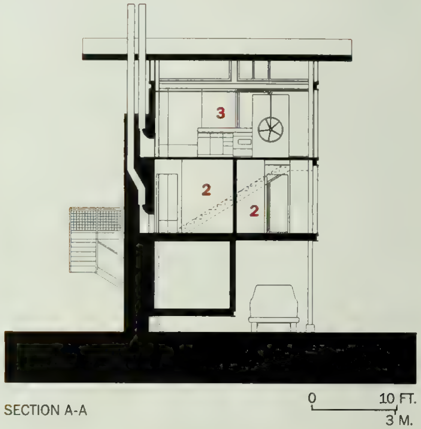
In contrast to the claustrophobic lushness west of the mountains, the high desert valley permits "a little box of a house in a big landscape," says Kundig, who spent much of his childhood in similarly dry, pine-dotted Spokane. Friedrich and Kundig paced the property, deciding to tuck the house at the downriver edge of the acreage, amid islands of cottonwood trees that appear to scud across a meadow.

Catching views of peaks and the low winter sun, Stilt Cabin's flat roof tips up to form a clerestory. A balcony projecting westward from the bedroom aims at Goat Peak, at the head of the valley. Within earshot, the river runs by, a short distance north of the cabin.

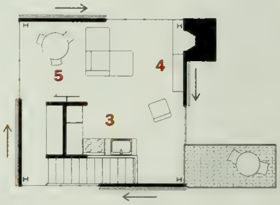
"In European houses, shutters are common," Friedrich says. He wanted Kundig to design something similar, so that "I could leave the house and not worry about it." He had been impressed by the elaborate hand-operated device that Kundig had designed to control the glass door at Chicken Point. For Stilt Cabin, the architect created massive shoji screens of heavy-gauge steel panels, operated all at once through a gear-and-cable apparatus. Fully closed, the steel surfaces, gently pre-rusted by a salt spray, armor the house against weather and wildfire. (In the dry valley air, the panels won't rust out.)

The tight plan squeezes the two bedrooms to the size of monastic cells, with tiny wardrobes instead of closets—which suits Friedrich fine. "To him, the house is a launching pad for outdoor activities," Kundig explains. A skier, hiker, runner, and practitioner of martial arts, Friedrich has even laid out a soccer field on a former horse pasture. Near the river he has installed a hot tub with its own outdoor shower, and is converting the old farmhouse to lodge his steady stream of guests.

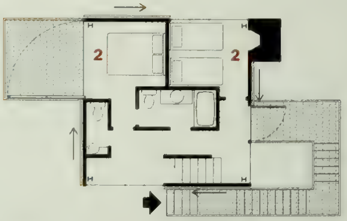
"I edited [the cabin] down to the basics, wood and metal," says Kundig, summing up his design approach. "The landscape seen from



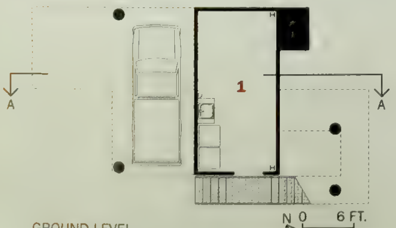
SECTION A-A



LEVEL THREE

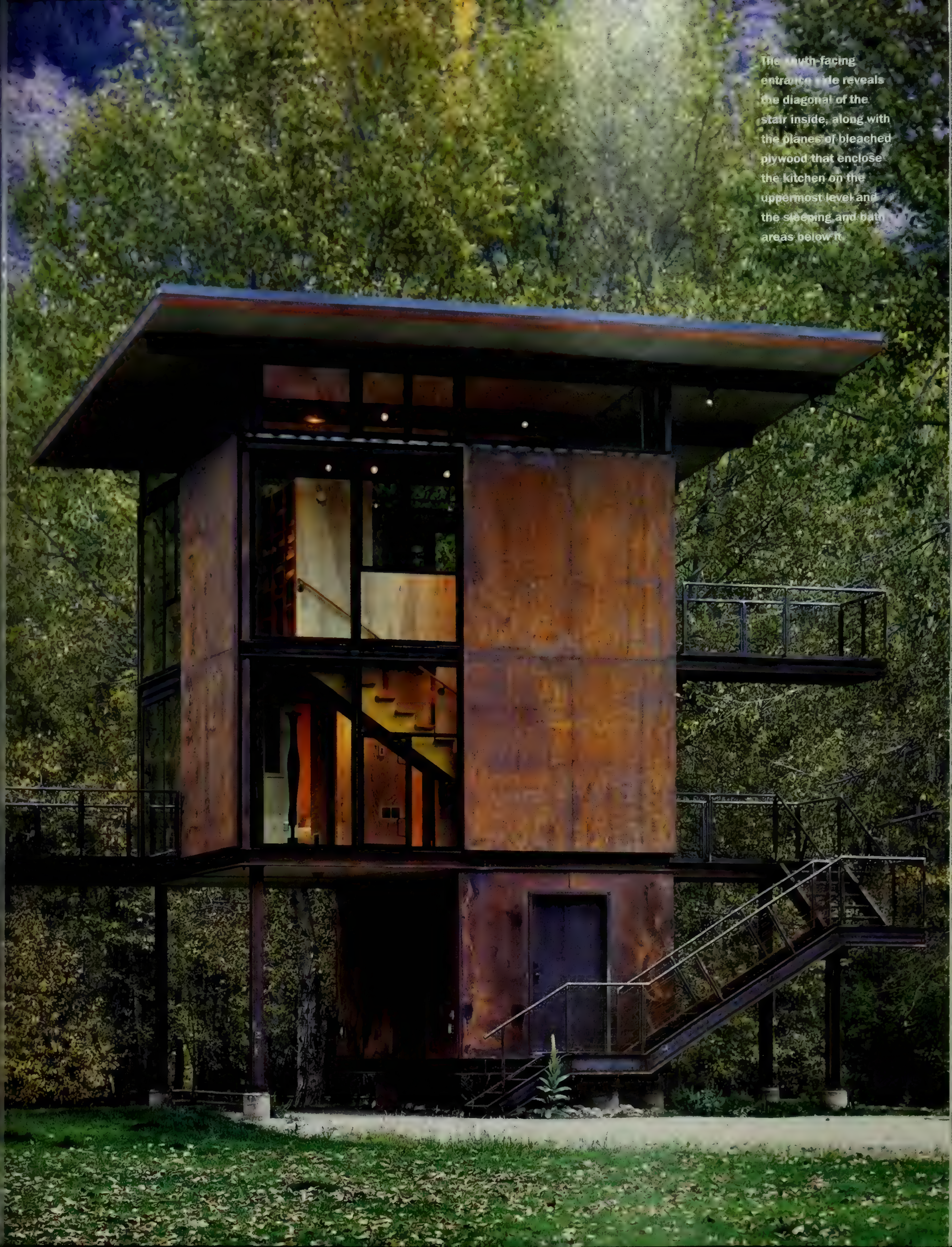


LEVEL TWO



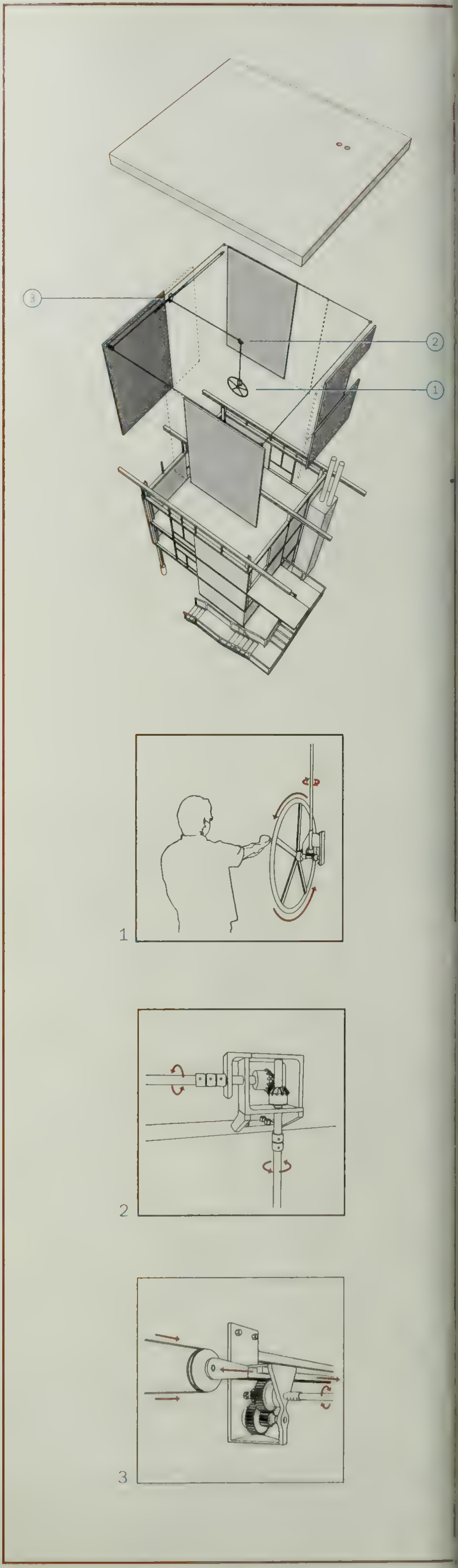
GROUND LEVEL

1. *Storage, laundry, and mechanicals*
2. *Bedroom*
3. *Kitchen*
4. *Living*
5. *Dining*



The south-facing entrance side reveals the diagonal of the stair inside, along with the planes of bleached plywood that enclose the kitchen on the uppermost level and the sleeping and bath areas below it.

The welded and bolted unpainted-steel frame remains visible throughout the structure, from the middle-level entrance (left) to the top-level kitchen/living area (bottom left and opposite, top). The entrance door and a massive pivoting door at the master bedroom (opposite, bottom) were fabricated from steel. A large wheel operates all four, shojilike protective panels at once through a gear-and-cable apparatus (right).



within is more important than how the building is seen from the landscape," he adds. The cabin's modesty provides a tonic antidote to the growing size and self-conscious woodsiness of the log-cabin mansions going up in the woods all around.

Perched high, the small house offers vantage points that make the visitor perpetually aware of the surroundings. On a recent late-winter evening, a light snowfall ended as clouds cleared away, revealing the setting sun blushing the nearby peaks. The next morning, a cloudless dawn lit snow-mantled panoramas in every direction. Slices of sunlight moving through the kitchen and living room tracked the hours of the day. Each spring, the cottonwoods leaf out in green flip-sided with silver. In summer, the deep blue of the river cuts through the meadows of sagebrush and pale straw. Fall brings a wash of gold. "Seeing the house all year round in different light," Friedrich offers, "I love it more and more." ■

Sources

Metal roofing: *AEP Span*

Steel framing: *Farwest Ironwork*

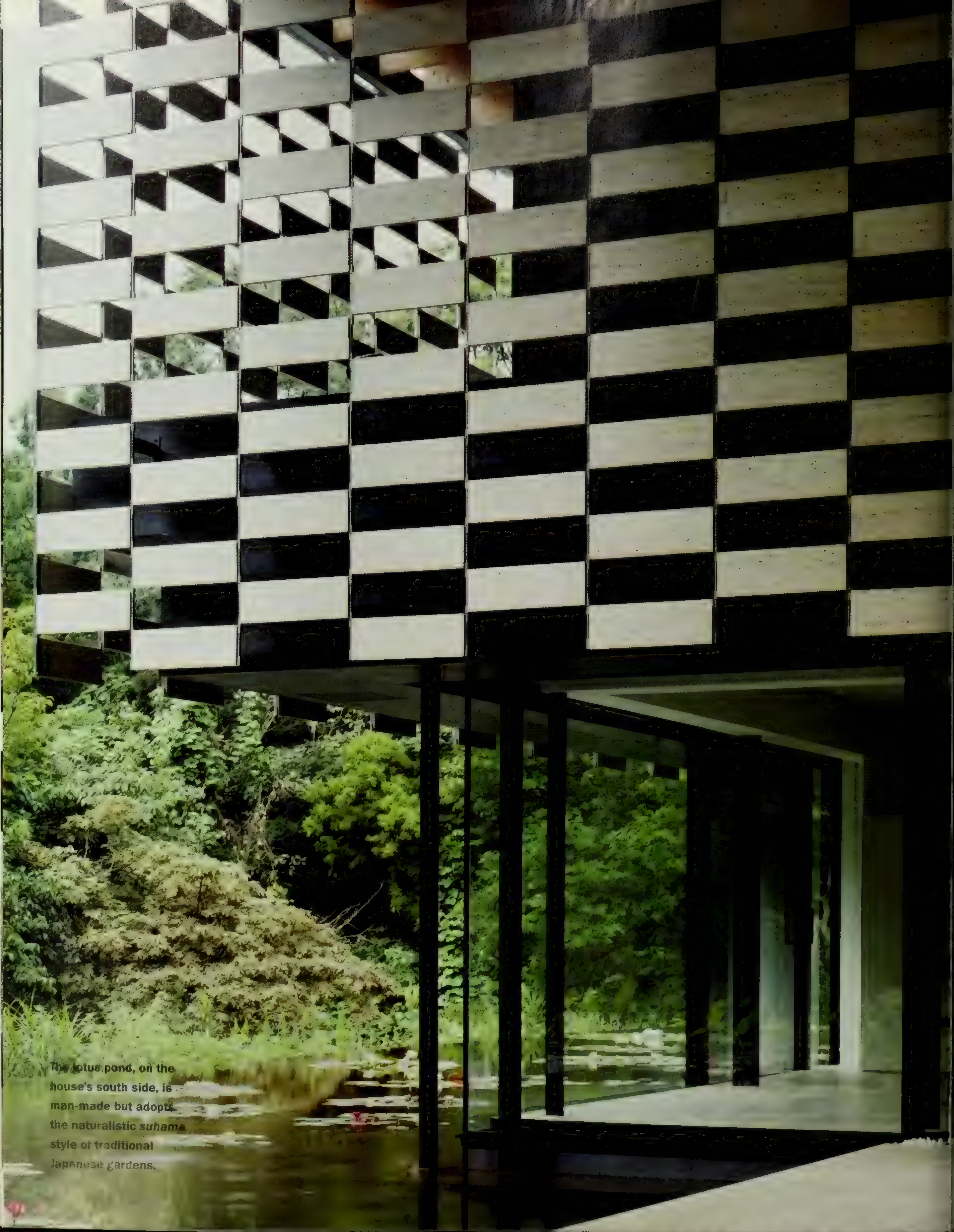
Aluminum windows: *Milgard*

Doors: *CECO (steel entrance door); custom by contractor (plywood); Fleetwood (sliding glass)*

Interior plywood: *Weyerhaeuser*

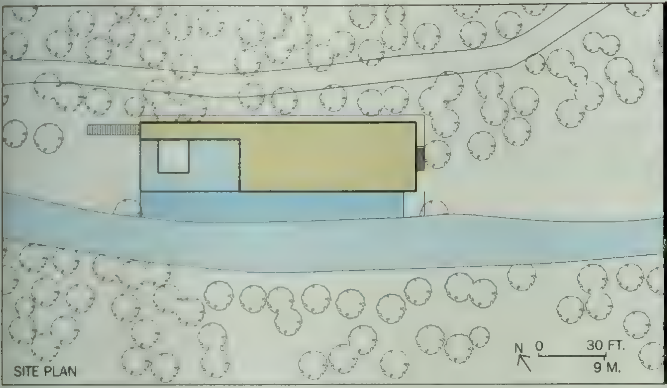
Furnishings: *Cassina; Leaf Chair; Knoll; Chista; Poltrona*

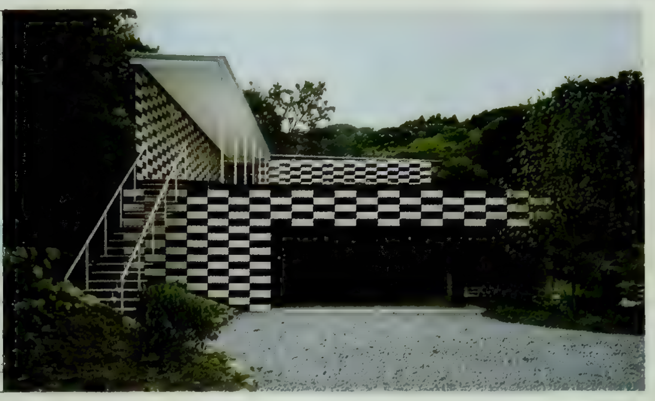
For more information on this project, go to Projects at **www.archrecord.com.**



The lotus pond, on the house's south side, is man-made but adopts the naturalistic *suhama* style of traditional Japanese gardens.

Kengo **Kuma** turns stone into gossamer, wrapping the **LOTUS HOUSE**, near Tokyo, in a checkerboard of wafer-thin travertine





The stair behind the garage (below right) leads up to a deck. Kuma juxtaposes three levels of water: the reflecting pool, on the second floor deck; a lotus pond, at grade; and the existing river, with its banks a precipitous 10 feet below the house.

Naomi Pollock, AIA

A checkerboard wrapper of thin travertine panels alternating with rectangular openings forms a delicate screen that partially veils Lotus House, a 5,737-square-foot weekend home, some 40 miles west of Tokyo. With this unusual exterior wall, archi-ct Kengo Kuma has explored what he calls "nonmonumental and ansparent ways of building with stone." He says he also intended the afer-thin checkerboard as a challenge to the traditional Western precept at stone should play a load-bearing role (or, at least, appear weighty). en before designing Lotus House, Kuma had a well-honed reputation r working closely with artisans and contractors to investigate the unex-cted possibilities of natural and man-made materials. And while this oject hardly represents his first experiment with stone, it is by far his ost daring.

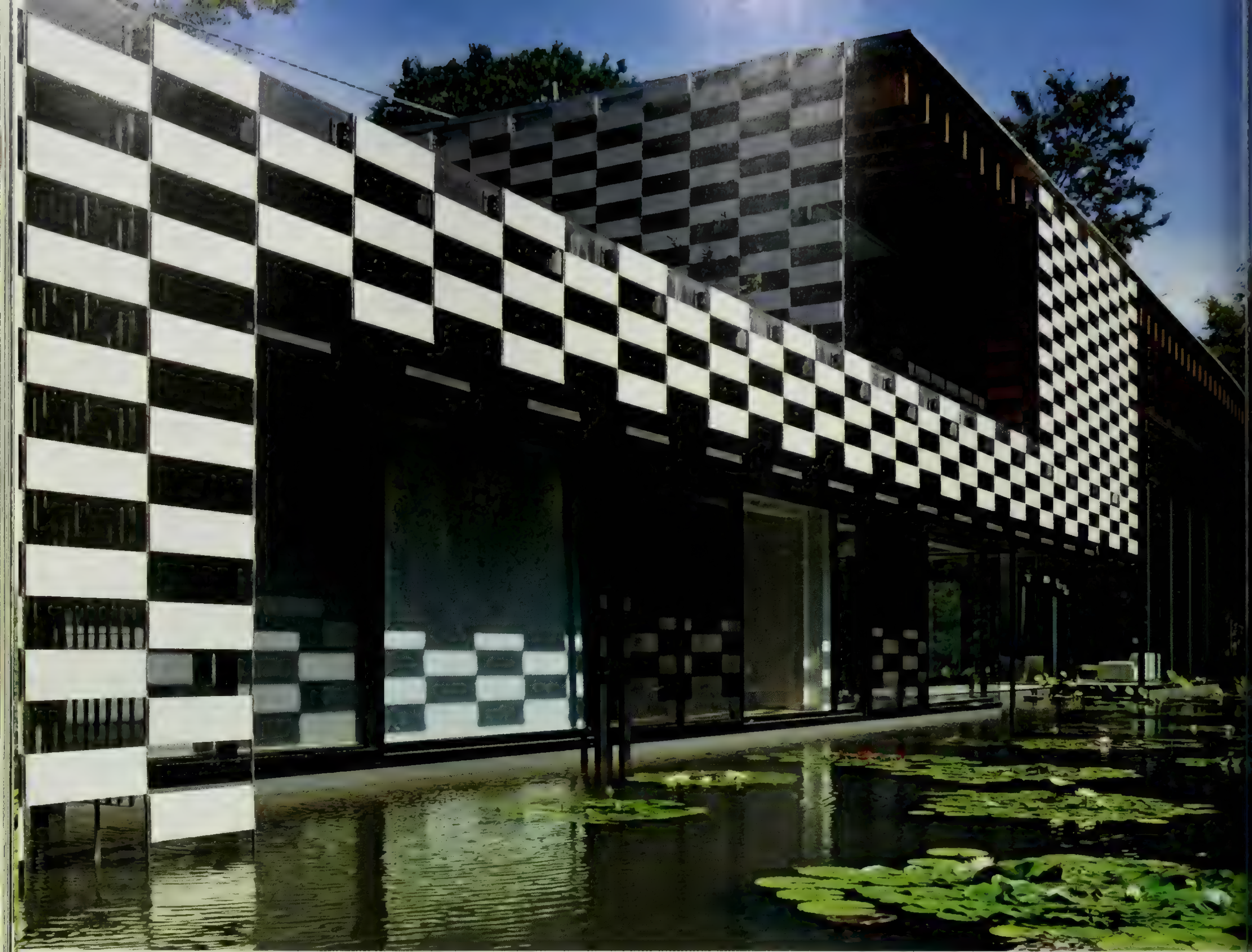
Here, the client's love of travertine, imported from Italy, ompted the initial material choice. Kuma also took inspiration from the panese tendency to blur boundaries between inside and out, but he soon inverted expectation by proposing "an architecture of holes." In fact, he envisioned the entire house—beyond the patterned, semipermeable wall—as a composition of solids and voids.

While Japanese regulations "count any space under a roof as interior [whether fully enclosed or not], people don't typically use these semi-open areas much," observes the architect. But for Kuma, such voids are "one of the best parts of traditional Japanese architecture," prompting him to weave them into his work and exploit their potential whenever possible.

At Lotus House, he did so with a vast terrace inserted between the linear structure's two main volumes. A wood-beamed roof, soaring 20 feet above the ground, crowns this outdoor room. One flanking volume contains the garage, kitchen, and two bedrooms, and above them, a reflecting pool, sauna, steam room, and suite of indoor and outdoor tubs. The other block houses a double-height, glass-enclosed living room with

CORD's Tokyo-based correspondent Naomi Pollock is the author of Modern panese House *(Phaidon, 2005).*

Project: *Lotus House, near Tokyo*
Architect: *Kengo Kuma and Associates—Kengo Kuma, principal; Yuki Ikeguchi, project architect*
Engineers: *OAK Structural Design Office; P.T. Morimura & Associates*
Landscape: *Takashi Shirai and Associates*



an alcove for an 8th-century statue of Buddha, behind a sliding wall. The living area spills onto the court—a perfect party space—which, in turn, opens dramatically onto a man-made pond, where lotuses bloom a few months of the year. Beyond this is an unspoiled forest.

Sited on the client's 8-acre parcel of undeveloped land—a rarity so near to Tokyo—Lotus House stands in a tree-studded, secluded valley with a small river running through it. Because of the hilly terrain, the logical spot for the house was near the river, where the client, a businessman with a keen interest in traditional Japanese art and religion, had already planted a collection of buildings: a 30-year-old wood teahouse by architect Togo Murano, a 19th-century wood farmhouse, and an early-20th-century stucco storehouse. (Elsewhere on the grounds, the owner had rebuilt a timber Buddhist temple for private meditation; a wooden Balinese sleeping cottage; and a massive, thatch-roofed Edo Period gate, relocated from a nearby town and now marking one of the property's two entrances.)

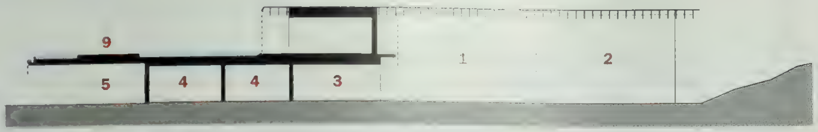
"SOMETIMES CLIENTS GIVE ME THE CHANCE TO REINVENT MYSELF," SAYS KUMA OF THE LOTUS HOUSE DESIGN.

For Kuma, the major challenge was how to relate his design not to the existing buildings (which are not even visible from Lotus House), but t the river, with its banks a precipitous 10 feet below the house. In earlie works, the architect had incorporated ponds, pools, and even the Pacifi Ocean. Here, he responded to the site by juxtaposing water with water. Hi elongated lotus pond parallels the river while directly abutting the building conceptually bridging the gap between the natural and the man-made Whereas the river remains almost invisible from inside the house, the lotu pond provides the visual backdrop for every room.

The man-made pond, with loosely defined edges and only a thi membrane separating it from the soil, adopts the naturalistic *suham* style, found in traditional gardens throughout Japan. By contrast, th house's upper-level reflecting pool, lined in granite with mitred corner and crisp edges, is far more akin to Kuma's previous work. The subtl lotus pond marks a new direction for him, spurred by the owner's pref erence for water that is "not too controlled," says the architect, joking tha "sometimes clients give me the chance to reinvent myself."

In other ways, Kuma's earlier projects referenced Japan's architec tural history. And like traditional Japanese villas, Lotus House has neither dominant facade nor a direct relationship to the street. Though the structur stands near the property's edge—within the sight lines of homes along narrow public road, just up the slope—the property's two gated entrance

1. *Courtyard*
2. *Living*
3. *Kitchen/dining*
4. *Bedroom*
5. *Garage*
6. *Soaking tub*
7. *Lotus pond*
8. *Reflecting pool*
9. *Deck*
10. *Open to below*



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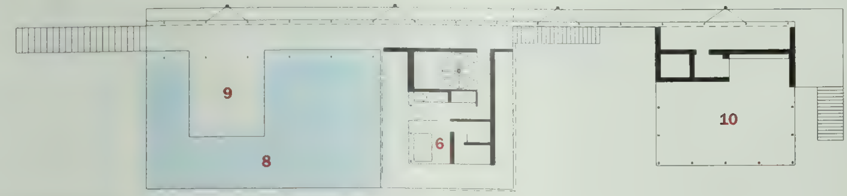

SECOND FLOOR

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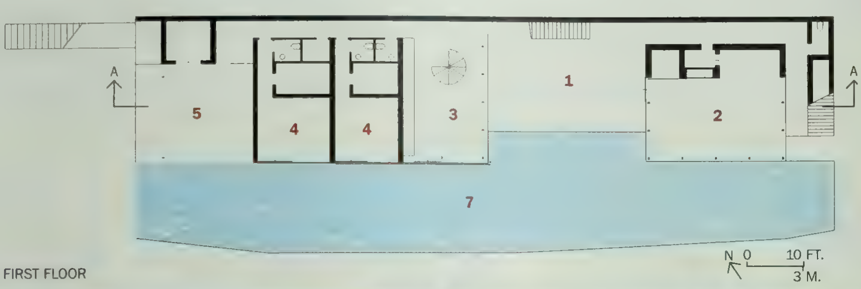
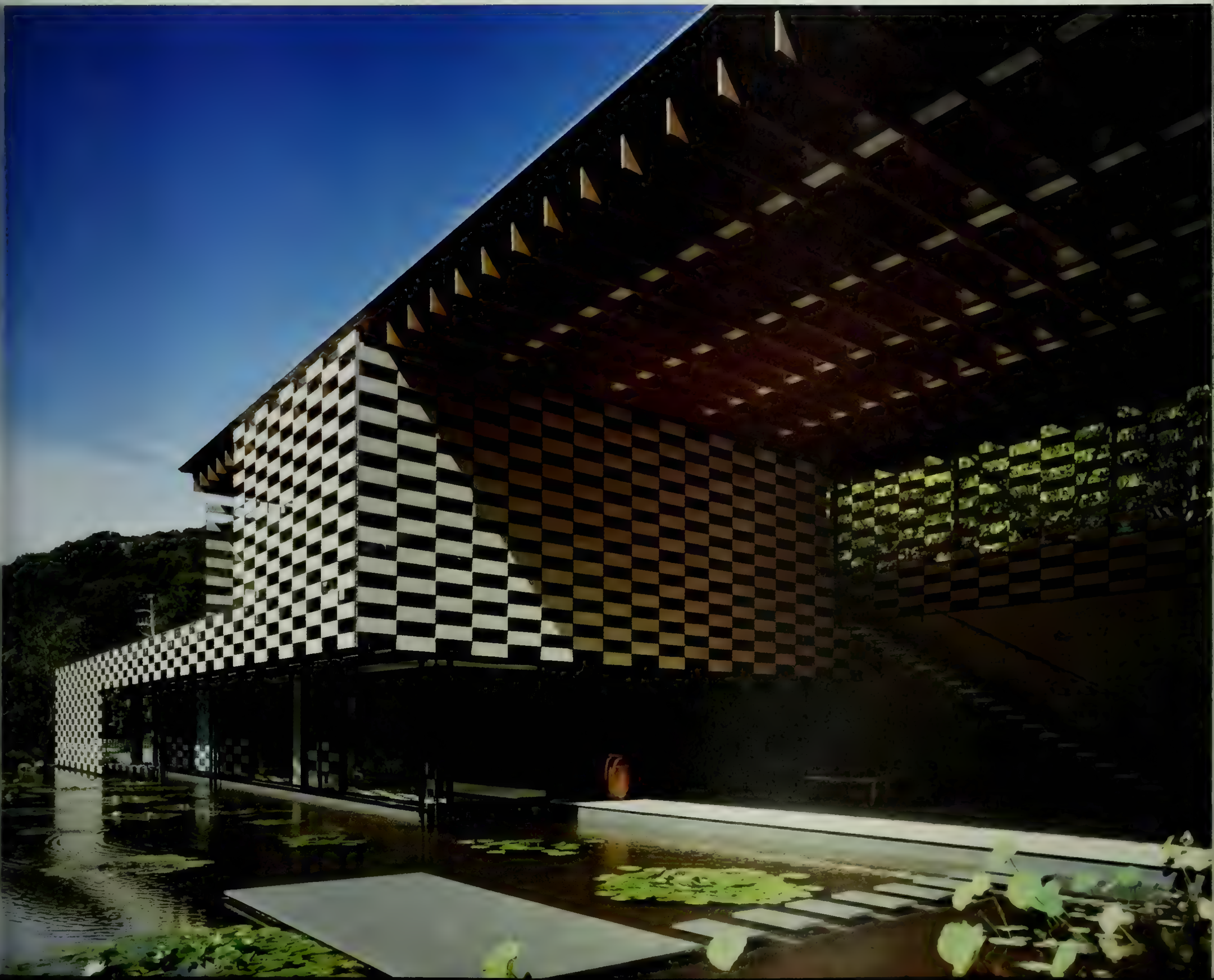
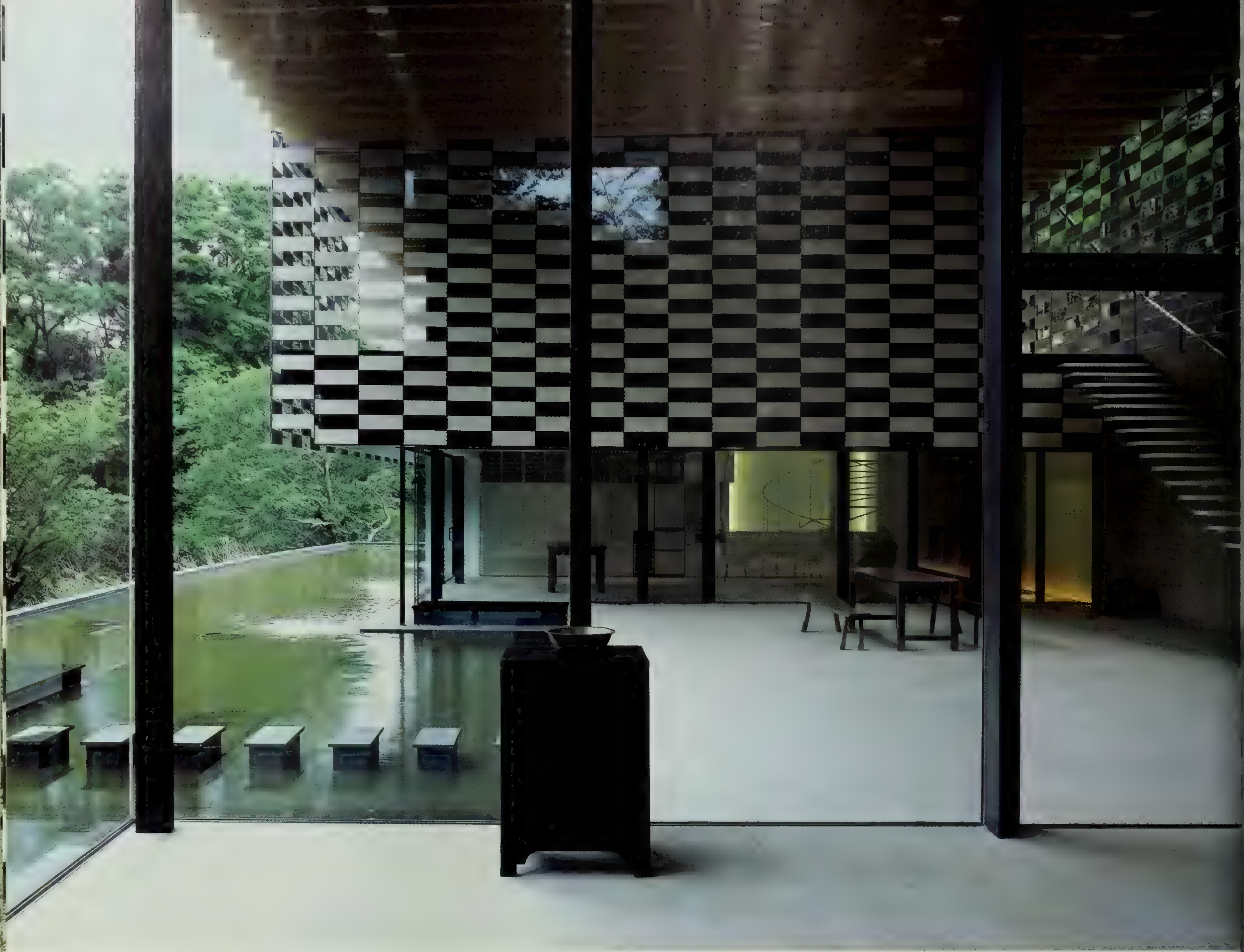
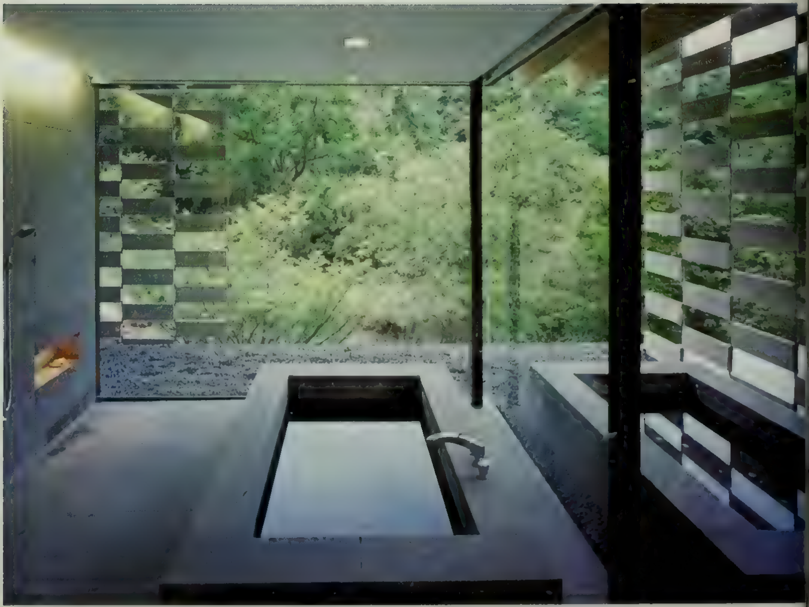


FIRST FLOOR





Like the visually light screen and the lotuses themselves, the stairs appear to float (above). Within the enclosed dining/kitchen area, a delicate spiral stair (in background above) rises to the upper floor. There, indoor and outdoor tubs mirror each other, as reflections of the checkerboard shine across the water (right).



tepping stones (below)
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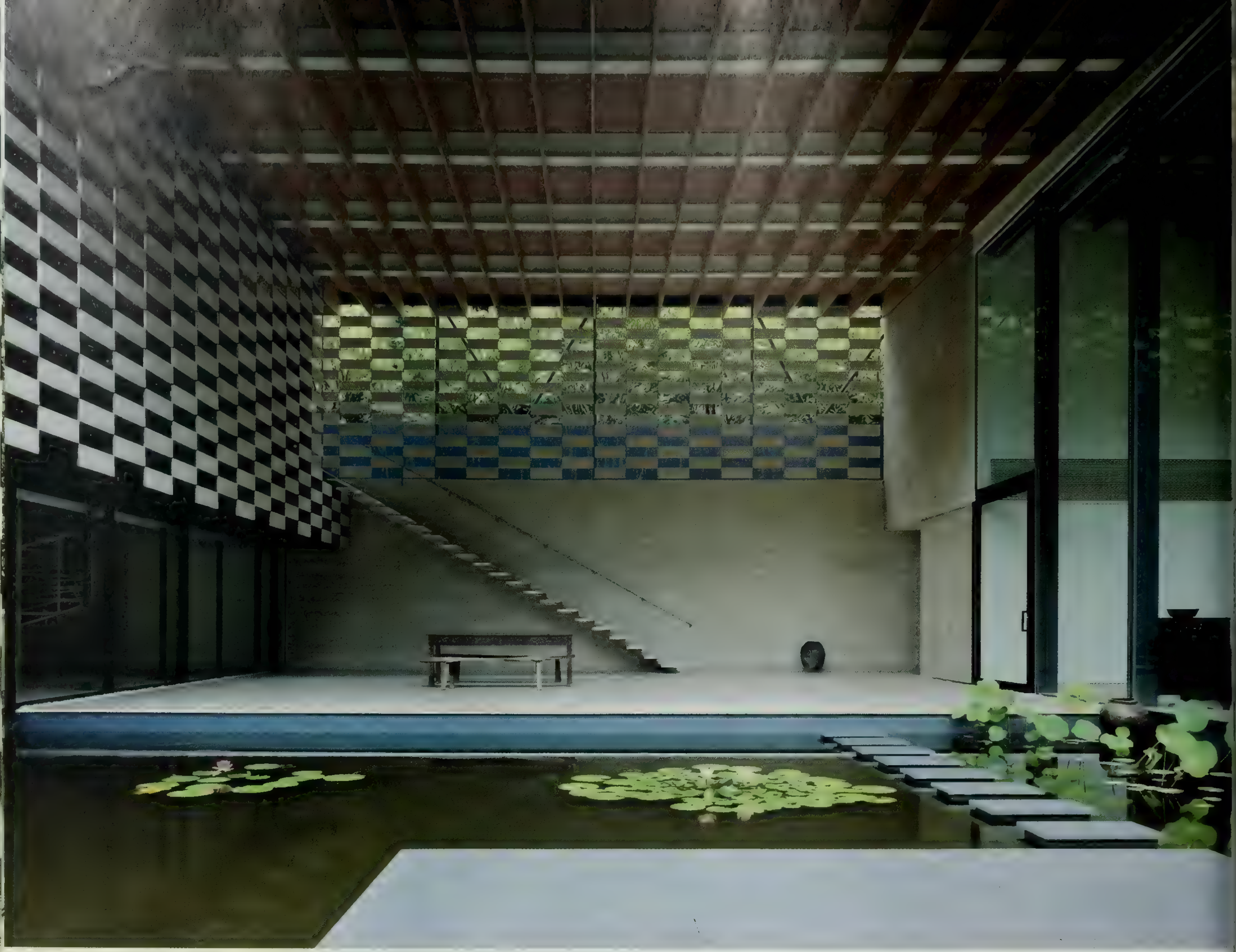


The courtyard's timber roof soars 20 feet above the ground. Suited to entertaining, this central space invites guests to flow over from the living and dining areas.

remove it from the quasi-rural surroundings, dotted with modest houses.

While floor-to-ceiling glazing and multiple entrances link Lotus House inextricably to the landscape, the building politely turns its back on its neighbors. Mediating between the home and its setting, the checkerboard veils parts of the front, sides, and almost the entire back of the painted-concrete building. Though the travertine wrapper filters, without completely eliminating, views in and out of the house, sliding glass walls open every major room to the lotus pond. When the window walls glide aside, the pool's shimmery surface practically joins with the wood floors of the airy, casual bedrooms, where watery reflections ripple across plain white walls. By contrast, the travertine-floored, double-height living room, encased in fixed glass on three sides, is formal, imposing, and more removed from the water (in that case, the pond). There, the adjacent covered terrace softens the room's hard surfaces. Though also grand in size, the cavernous, semi-outdoor terrace is defined by its intricate checkerboard rear wall that allows gentle breezes to flow through the house.

Unlike more conventional stone walls, this wrapper has no structural capacity. Its 1-inch-thick travertine plates, 8-by-24 inches each, neither touch the ground nor relate proportionally to the reinforced-concrete house's spacing of wood beams and steel columns. The checkerboard's independent structure holds each panel in place with a complicated grid of bolted, ¼-inch-thick, stainless-steel flat bars, suspended from the roof beams. Steel columns, 9 feet apart, stabilize the hanging screen. Of course, these heavy-metal underpinnings remain hidden from view, behind the visually floating screen that sways slightly in the breeze and hovers mysteriously 3 inches above the floor.

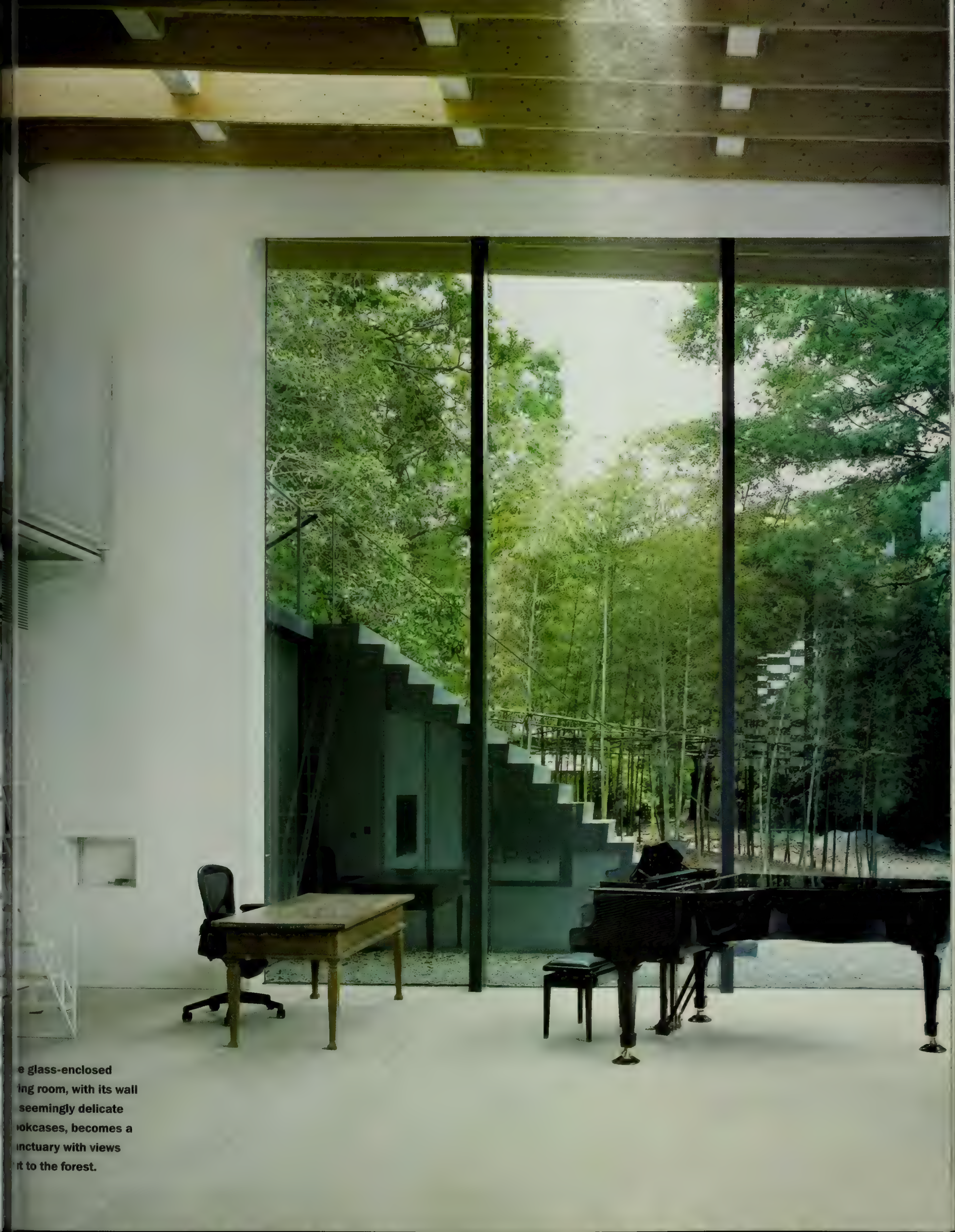
An architectural oxymoron, the travertine seems to defy gravity. Instead of relegating stone to heavy lifting or superficial veneer, Lotus House's checkerboard reinterprets Japan's traditional see-through screening devices. With many earlier buildings, Kuma had achieved such delicacy through surface-mounted, exterior wood slats. But in this project, thinly sliced stone, secured in a stainless-steel web, yields a similar result. While such apparent lightness, ironically, took heroic effort, Lotus House ultimately reveals Kuma's exceptional sense of delicacy and proportion—and his ability to create entirely unexpected results. ■

Sources

Windows and doors: *Tostem*

Furniture: *Extra Cappellini; Moroso*

For more information on this project, go to Projects at **www.archrecord.com**.



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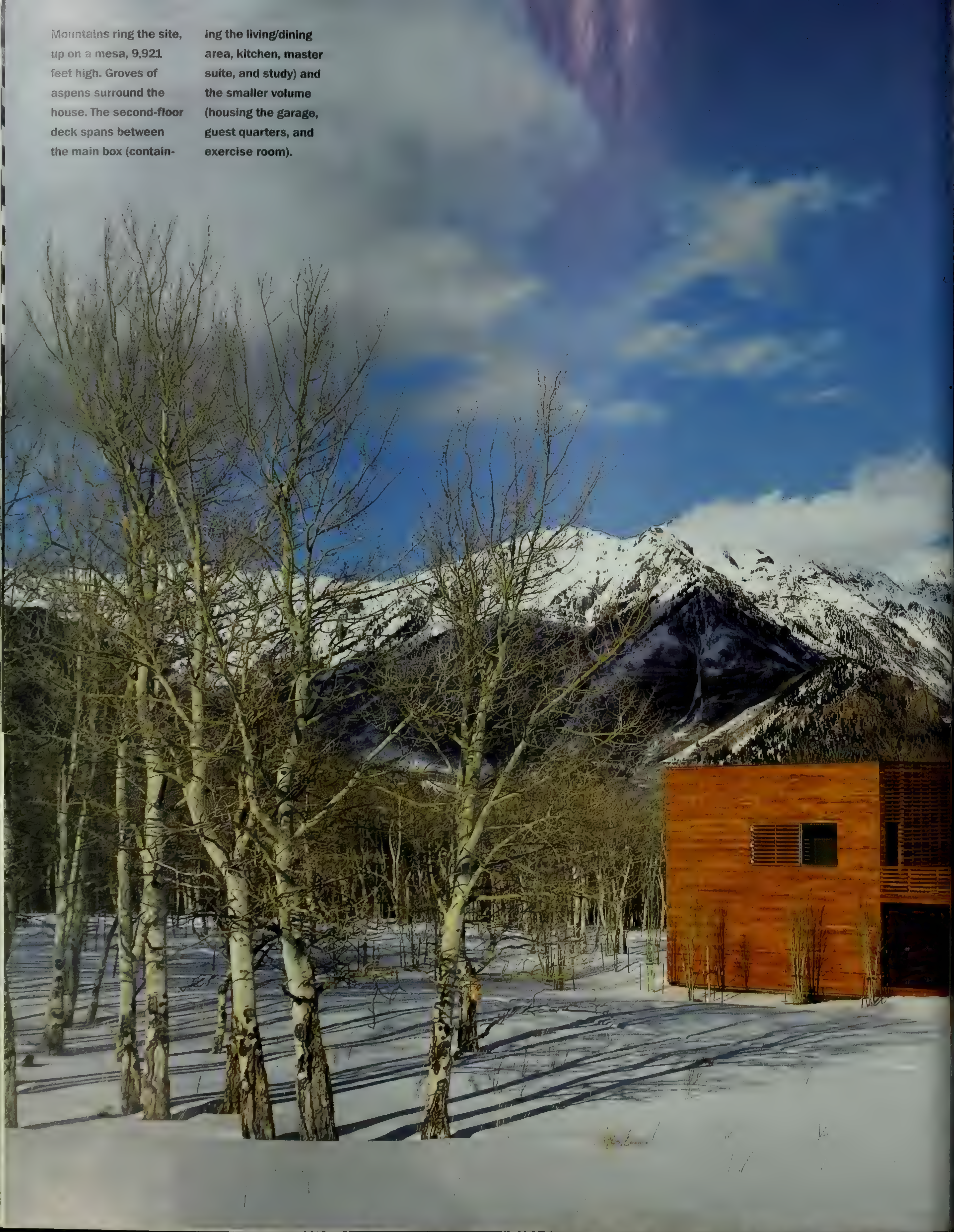
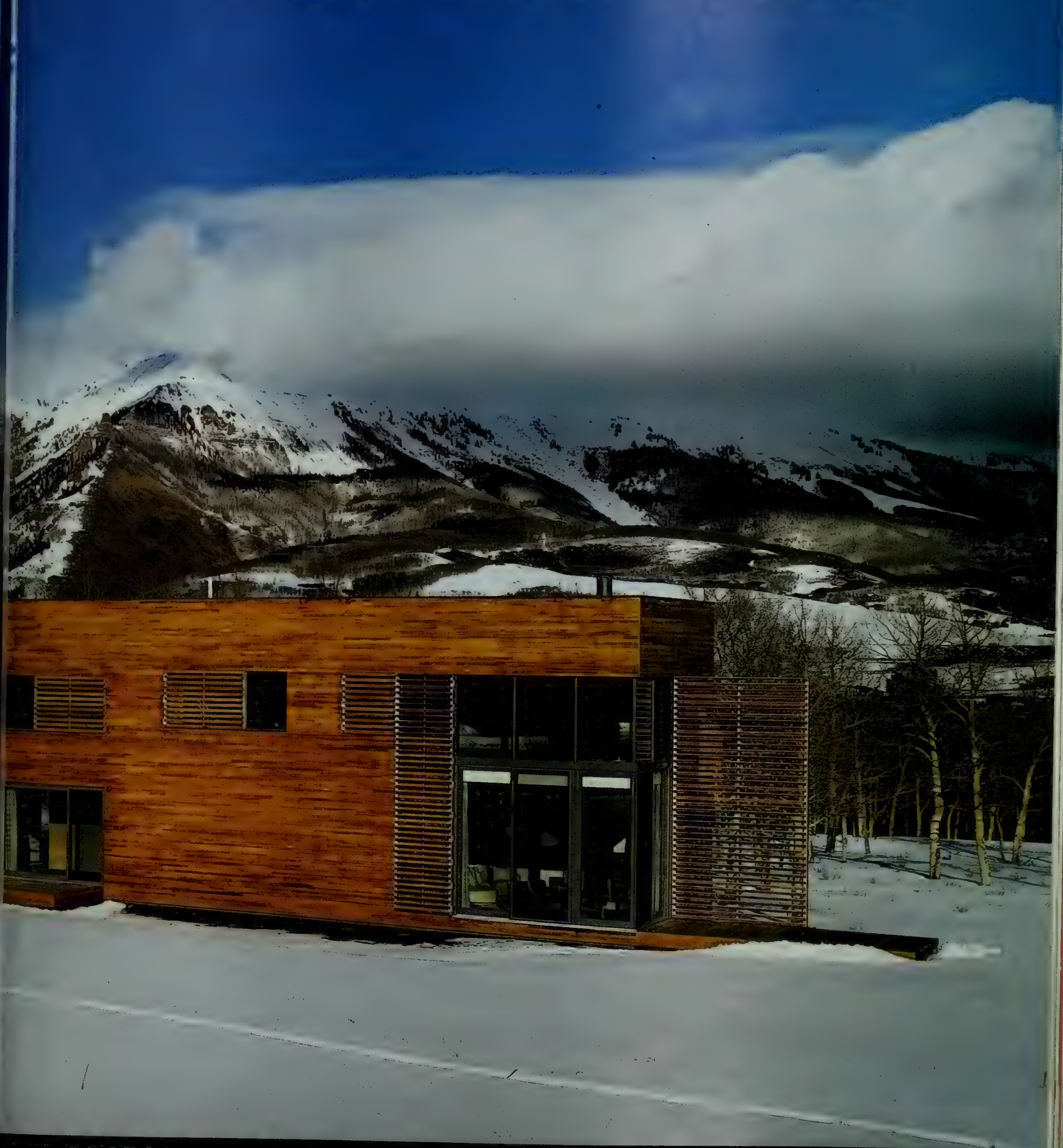
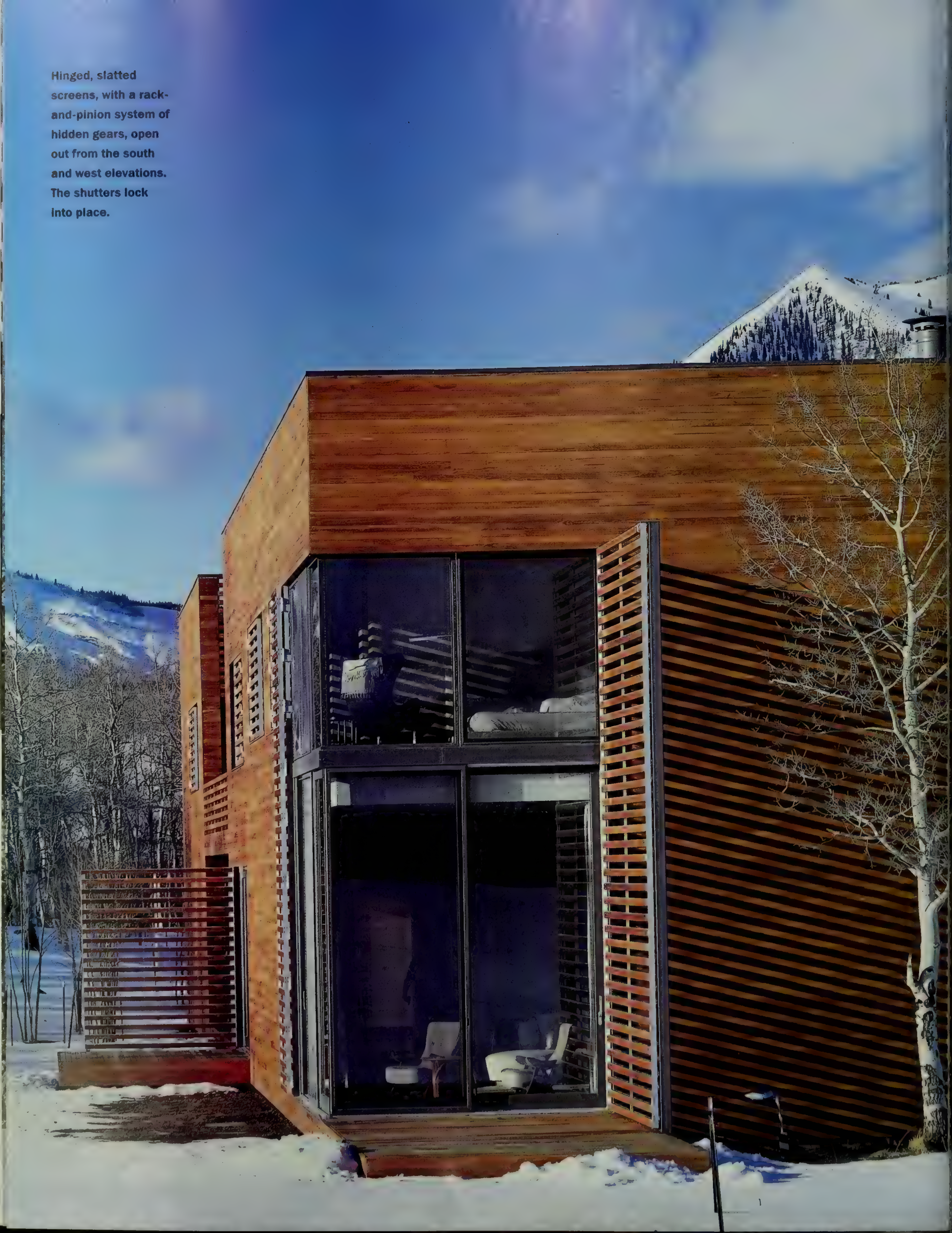
Mountains ring the site, up on a mesa, 9,921 feet high. Groves of aspens surround the house. The second-floor deck spans between the main box (containing the living/dining area, kitchen, master suite, and study) and the smaller volume (housing the garage, guest quarters, and exercise room).



Inspired by Asian puzzle toys, **Maya Lin** crafts the kinetic **BOX HOUSE**, opening it quietly to high peaks in the Colorado Rockies





Hinged, slatted screens, with a rack-and-pinion system of hidden gears, open out from the south and west elevations. The shutters lock into place.

y Sarah Amelar

Asian puzzle boxes with secret sliding and pivoting panels first inspired Maya Lin's architecture in the Norton Apartment in New York [RECORD, September 1999, page 132]. There, multiple planes folded open or closed, transforming the interior into a ed à terre for one, a home for a family with children, or a space for an ele- ınt soirée. More recently, when Lin received a commission for a house in the olorado Rockies, the idea of a box toy sparked her imagination once again, ıt this time, with a full building, she decided to take the notion further.

Drawn to the work of Donald Judd, she was intrigued by the ea of very simple cubes or boxes strewn in the landscape. But as she me to understand the particulars of both the setting and the clients, her inimalist volumes evolved in site-specific ways, informing the inner and ıter workings of this kinetic puzzle—leading to boxes within boxes and relationship with the surroundings that ranges from quiet to expansive.

"At first glance, my architecture appears reserved—unlike my ulptural pieces, which are more gestural and clearly about the land- ape—but the Box House may be deceptively simple," suggests Lin. "As ıu gradually discover, it's also quite playful."

This tendency toward outward reserve was hardly a problem for e Colorado clients, a couple in their 50s who were already knowledgeable ıtrons of architecture. Because their primary home, in another state, acts as magnet for architecture aficionados, they envisioned their mountain treat as a private place, where they could simply enjoy hiking and bird- ıtching. So they carefully sited Box House on hundreds of acres, which ey generously deeded to a conservation easement. This arrangement will eserve—and protect in perpetuity—much of the wild beauty bordering ı increasingly popular ski area. Besides Lin's Box House, the only other ucture that can ever rise on the land is a future caretaker's cottage.

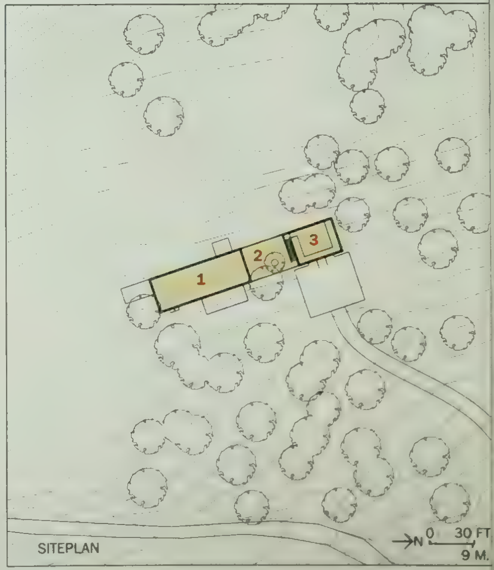
The architect then positioned the house so it can't be spotted from ıy other property. Instead of perching the building majestically on the ghest point, she placed it on a lower mesa (9,921 feet high), ringed by ountains, affording panoramic views of the surrounding peaks. A private ad (an old rancher's route, already in place) leads the way, with 2 miles of ıitchbacks, up to the house. "The idea was to create a modest and discreet ucture—and then reduce it even further, minimizing your first perception it," says Lin. Initially, you see only the narrow end of the building's long, ctangular form. Then, as you draw closer, the full composition begins to nerge: two teak-clad boxes, totaling 6,760 square feet on two stories, joined a second-floor deck. One volume contains the kitchen and main liv- g/dining area beneath the master bedroom and study; the other houses the ırage, at grade, rising to the home gym and sole guest room.

Eventually, as this former ranch land becomes reforested, aspens ill hide much of the garage component. Already, supple young trees veil e site, giving the impression that the boxes were dropped into an exist- g forest. The flickering, shadowy light, cast among the aspens, inspired n to create large, slatted, operable shutters across broad areas of the ele- ıtion and leave open slits between the deck planks. Sunlight filtering rough these layers abstractly evokes dappled rays in the forest.

You enter the house from under the central deck, metaphorically shadowy glade. Then, as Lin puts it, "you float up, spiraling toward the

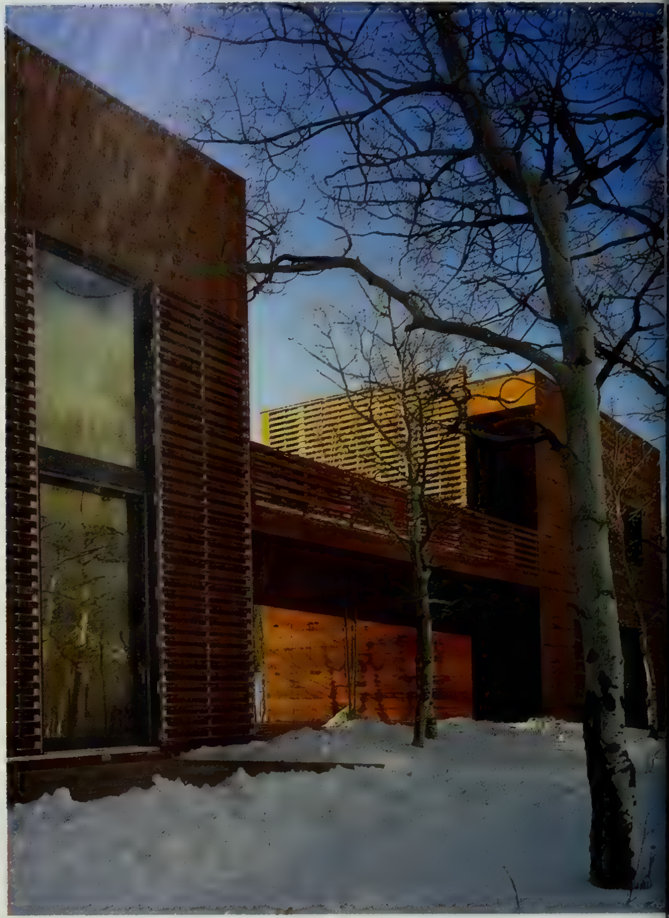
oject: *Box House, Colorado*
esigner: *Maya Lin Studio—Maya n, principal; Carl Muelheisen, Corrie ısen, project managers; Selin Maner, ıtri Vientravi, Josh Uhl, project team*
sociate architect: *William Bialosky*
Engineers: *Robert Silman Associates (structural); Burggraaf Associates (mechanical)*
Consultants: *Edwina von Gal (landscape); Tillett Lighting Design*
Interior designer: *Alan Tanksley*

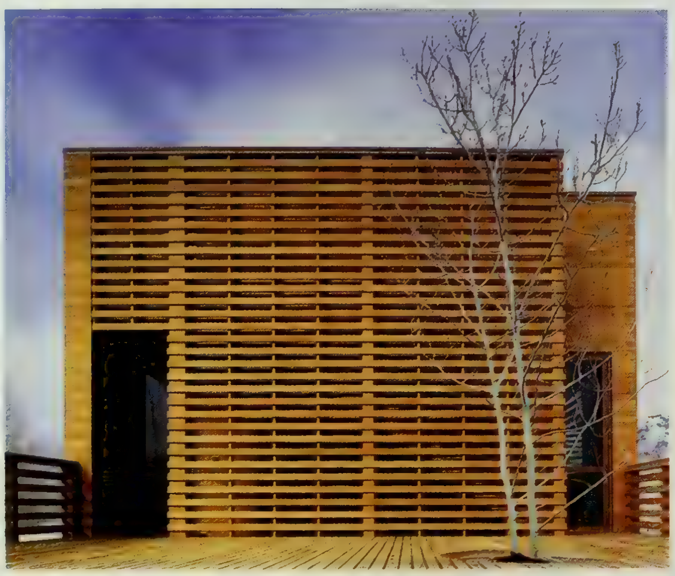
When the large shutters open, glazed areas of the facades become fully revealed (opposite). Light filtering through the slats abstractly mimics rays passing through the surrounding aspens (this page).



1. *Main volume*
2. *Deck*
3. *Garage/guest quarters/ exercise room*

Lin considered making the central deck a drawbridge, but ultimately decided to leave it fixed (right). Entry is from under this platform, into the main house, to the left, and the guest quarters (below two), to the right and up a flight of stairs (opposite). The split between the house's two volumes and the single sapling sprouting up through a hole in the deck (right and opposite) suggest landscape flowing through the building. The tree also recalls Le Corbusier's Heidi Weber Pavilion.



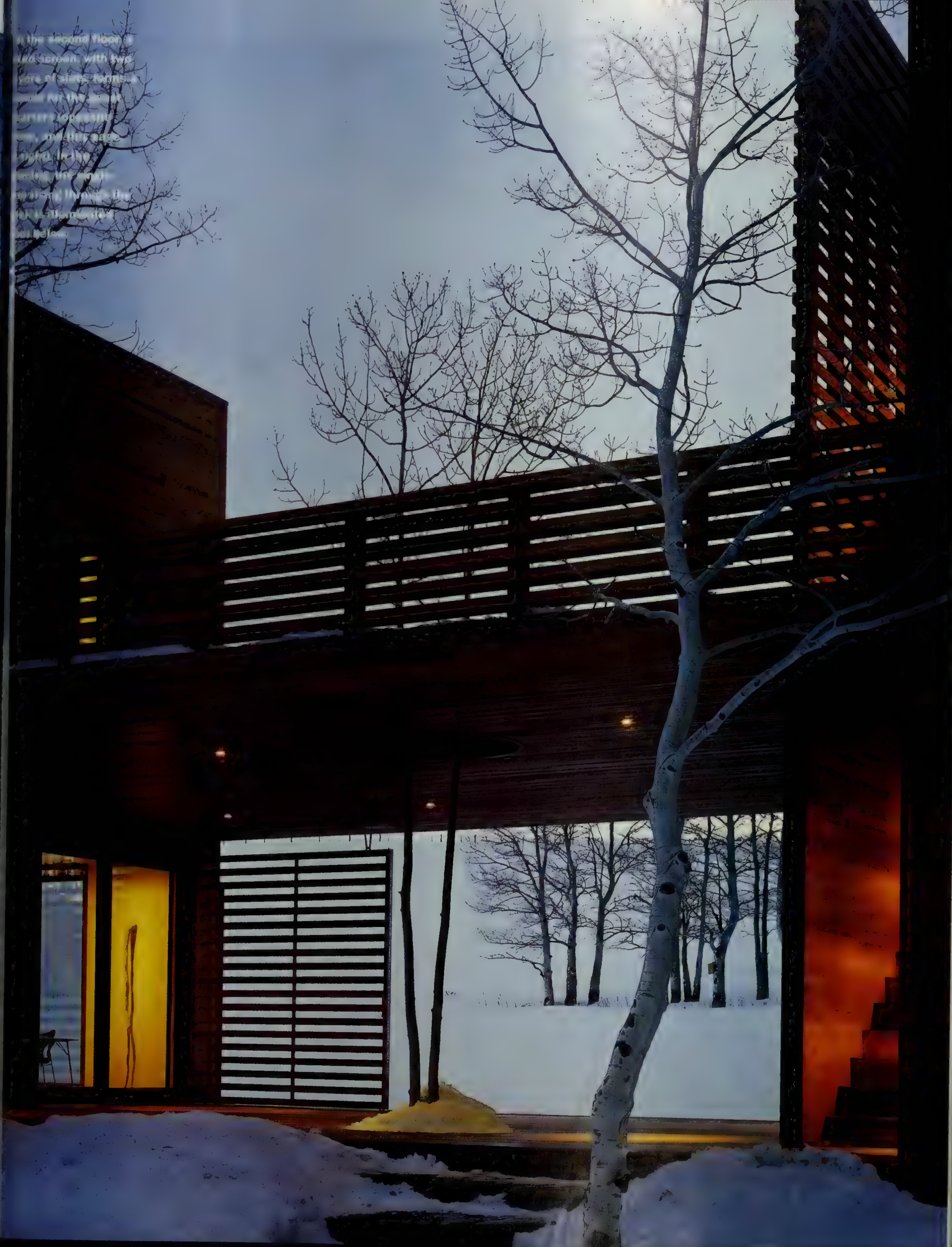


"light and views," which she reveals fully from the top platform, on the thir story, over the guest and exercise rooms. For this upward journey, the architect borrowed a classic strategy from Japanese houses, designing eac window to frame a specific view out, expanding the interior visually int the landscape. The hinged exterior shutters can either shade the large windows, or swing open to reveal the vistas.

Lin considered giving this house of moving parts a drawbridg between the two volumes, but ultimately decided "that was getting to hokey." Instead, her team focused on making the visually delicate shutter strong and stable enough to permit maintenance workers to climb on then and to prevent any rattling in the wind. "The time we spent making the 140 foot-long gunshot exterior absolutely flat and plumb was pretty dramatic, recalls the contractor, Paul Ricks, of Fortenberry Construction. "Pulling o such a pure and seemingly simple design required a high level of perfection.

Crafted, even on the exterior, like a piece of fine cabinetry, th house has minimum tolerances of 1/16 of an inch—though Ricks suggest the finesse typically approaches 1/32. As Samuel Aarons, who masterminde the hardware detailing, recalls, "Every latch had to be perfect and disappearing. We had to invent on a daily basis—with over 100,000 precisio holes for the louvers alone. We deployed a lot of aeronautical technolog including aircraft aluminum, for lightness with strength and rigidity." T lock the shutters in place, he devised a rack-and-pinion system of hidde gears. Rather than flaunt the mechanisms and technology, Lin chose t give them a quiet presence, or in places, even render them invisible.

On the interior, the game of kinetic boxes within boxes procee with an assortment of moving panels, including Dutch, pivoting, hinge



n the second floor, a
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yers of slats, forms a
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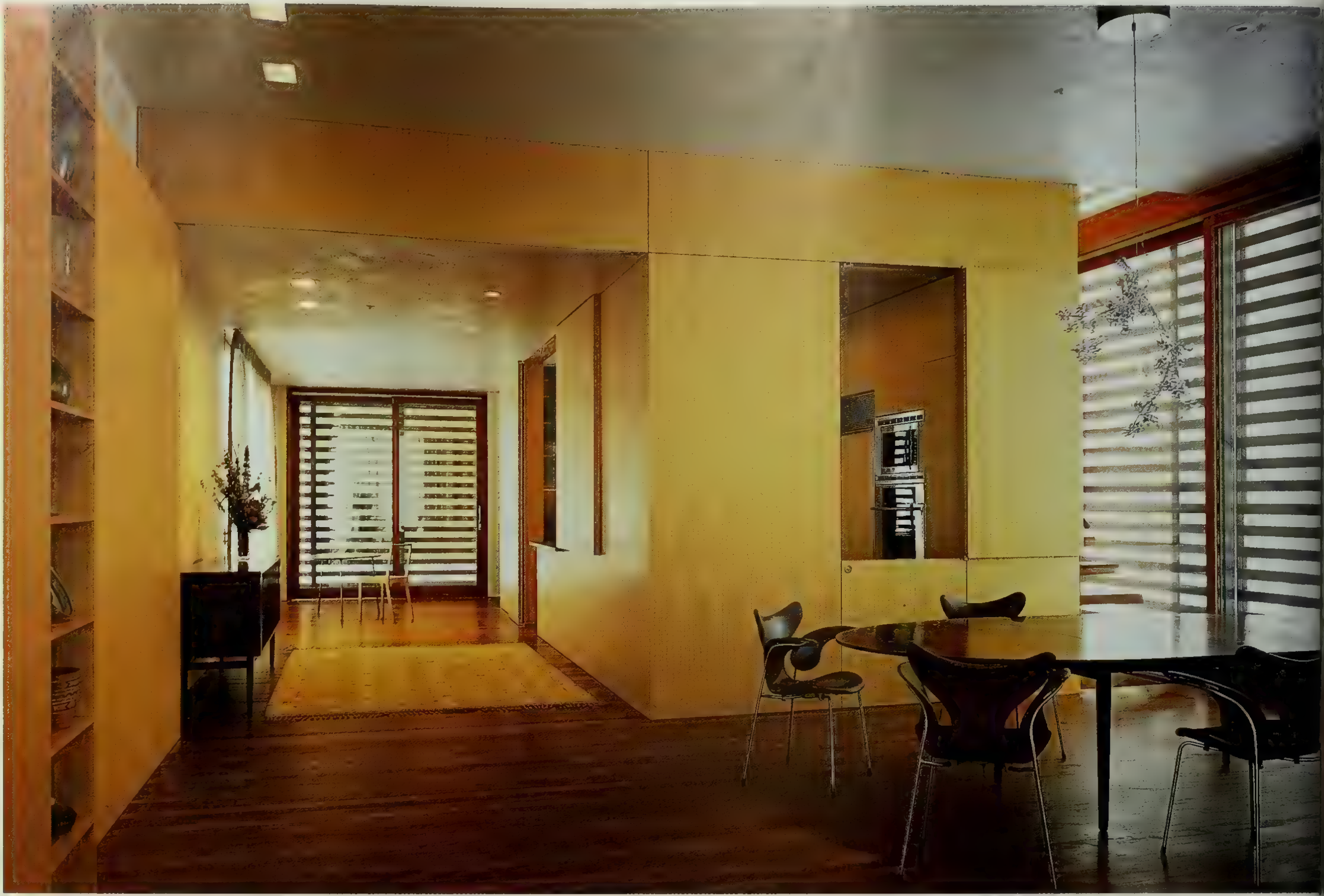
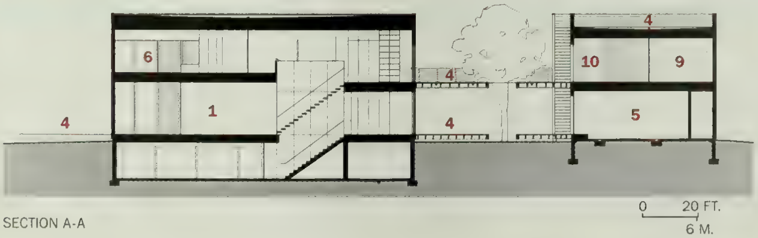
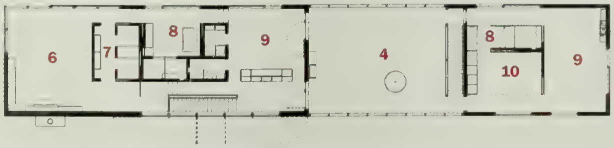
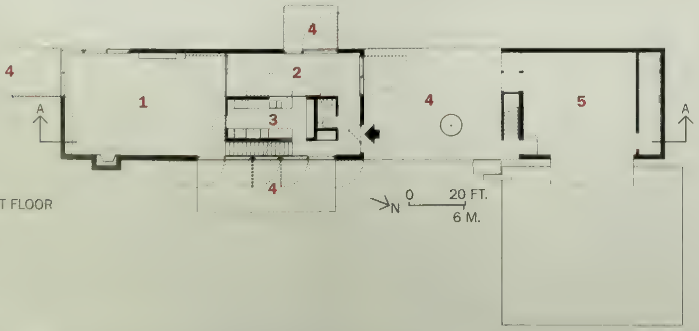




SECTION A-A



SECTION FLOOR



FIRST FLOOR

1. *Living*
2. *Dining*
3. *Kitchen*
4. *Exterior deck*
5. *Garage*
6. *Master bedroom*
7. *Closet*
8. *Bathroom*
9. *Guest room*
10. *Exercise room*

On the ground floor, the eucalyptus-clad inner box, with Dutch doors, houses the kitchen. A bi pivoted panel can also close off the entry foyer (above). Cantilevered steps, visually afloat, lead to the second floor (opposite, bottom). On the upper level (opposite top right), the eucalyptus paneled box encases the master dressing are and two bathrooms. A long view from the study takes in the master bath with its floor of greenish Pietra de Cardoza, and a corner of the master bedroom, with its views out to the mountains (opposite, top left).

and pocketing doors. Lin wanted to define and continually redefine the spaces, she says, "without a single stud wall." In the main part of the house, the inner box contains the kitchen, rising like a tower to enclose the master dressing room and bathrooms above. In the guest wing, the inner volume houses an exercise room and bath. While the exterior shell is of teak, framed in wood and steel and lined in hand-troweled plaster, the inner boxes are of pale eucalyptus, playing against the floors' dark afromosia. (All the wood, Lin stresses, was sustainably harvested.) Between the main inner box and the slatted facade, a run of cantilevered steps (wood over steel flanges) seems to float, pulled away from the flanking surfaces. The system of moving parts relies visually and, to some extent, functionally on the precise alignment of reveals, seams, and figured wood grain, as well as the articulation of separate parts. The multiple panels provide myriad configurations, including a study with a desk that folds down like a Murphy bed and a kitchen that opens partially with a bar counter or closes up completely into a neatly packed box.

Well crafted inside and out, the nesting volumes utter not so much as a creak. The house maintains a quiet presence among the aspens, but if you peel back its layers and open its boxes to the sun's rays, the whole ensemble becomes animated—and really begins to speak. ■

Sources

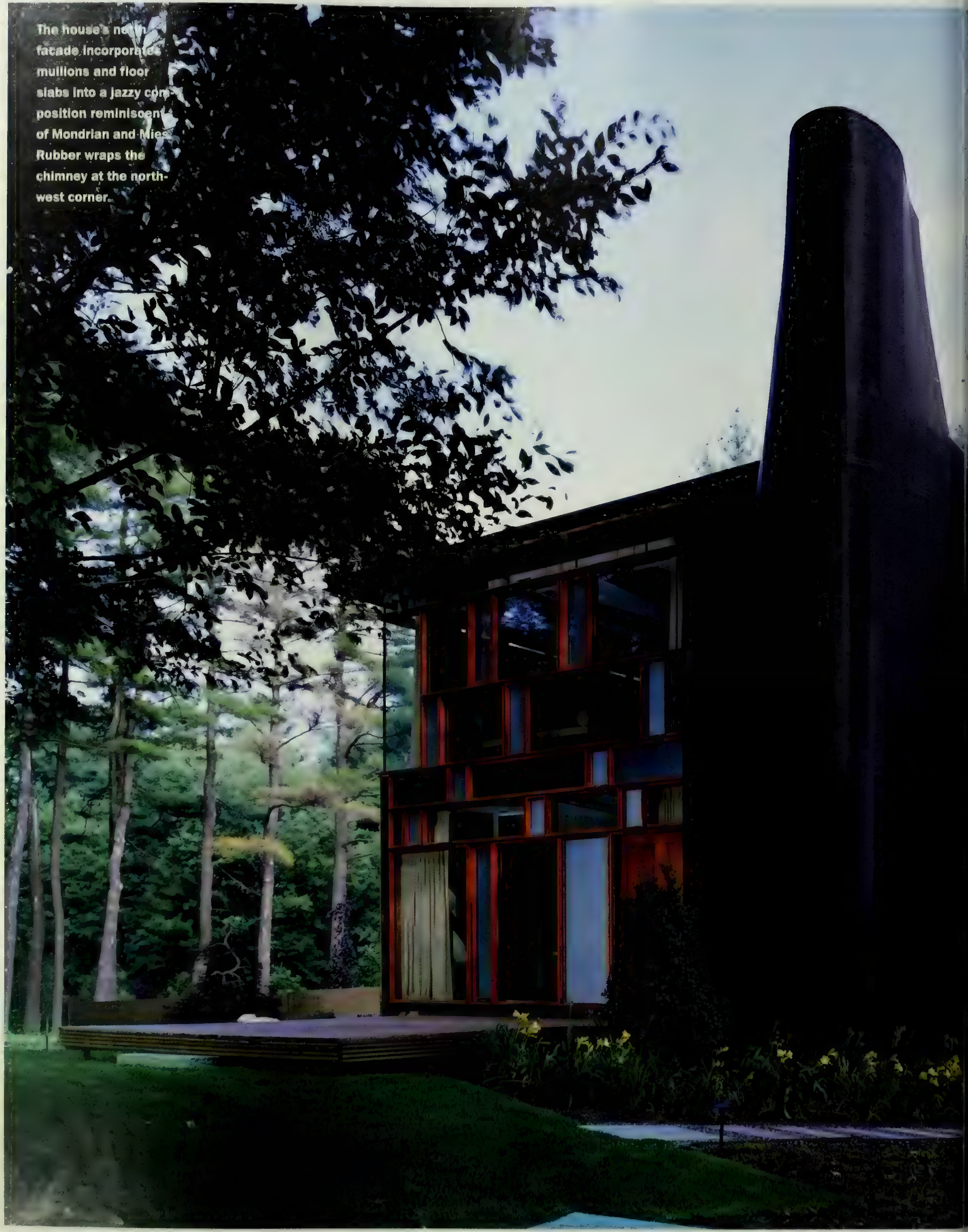
Lighting: *Nulux; Louis Poulsen; Edison Price; Bega; Iris; BK Lighting; Hekowa*

Glass: *Sevasa USA*

Plumbing fixtures: *Dornbracht; Lefroy Brooks; Duravit; WetStyle; Speakman; Blanco America*

Appliances: *Sub-Zero; Bosch; Fischer & Paykell; Miele; Gaggenau*

For more information on this project, go to Projects at **www.archrecord.com**.



The house's north facade incorporates mullions and floor slabs into a jazzy composition reminiscent of Mondrian and Mies. Rubber wraps the chimney at the northwest corner.

With the **NEW ENGLAND HOUSE,** clad in black rubber and cedar, **Office dA** reinvents the cube

By Fred Bernstein

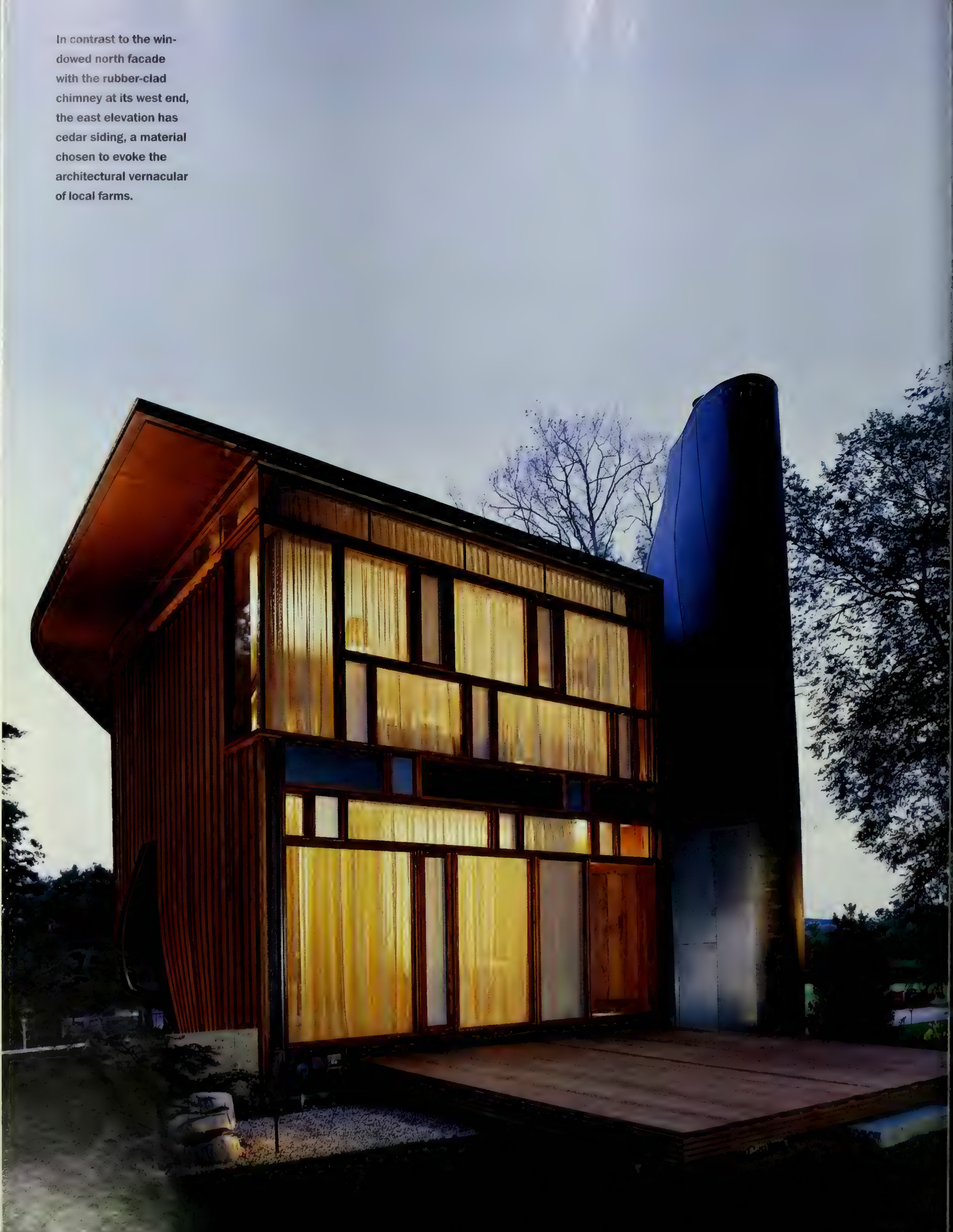
Twenty-five years have passed since the Rubik's Cube was a marketing meteor, but as a metaphor, it still has force for Monica Ponce de Leon. Each year, at Harvard's Graduate School of Design (GSD), she teaches a studio named for the maddening puzzle, which offers an important lesson: When a volume's exterior is truly linked to its interior, getting the outside right may require tireless manipulation of the inside.

Ponce de Leon and Nader Tehrani, her GSD colleague and partner in the Boston firm Office dA, have created a house that demonstrates that challenge. The typical American approach to home design, in which each new space adds a new volume, held no appeal for them. "This house," says Ponce de Leon, "is the opposite of sprawl." That, and the desire to get the two-bedroom, 2,600-square-foot interior up high enough to give the owners treetop views, resulted in a nearly cubic building.

But there is nothing simple about this cube, which twists and turns in plan and section in an almost dizzying profusion of material and formal explorations. Tehrani and Ponce de Leon, who have been working together since they partnered on their GSD thesis in 1991, consider their projects built essays. In this case, the clients, a young couple, set the bar high: Collectors of contemporary art, they imagined their land as a place

Fred Bernstein contributes to The New York Times *and many design publications.*

Project: *New England House*
Architect: *Office dA—Monica Ponce de Leon, Nader Tehrani, principals; Hamad Al-Sultan, Tali Buchler, Albert Garcia, AIA, Kristen Giannattasio, Lisa Huang, Elise, Shelley, design team*
Interior designer: *Manuel de Santaren*
Engineers: *Bill Bishop (structural); Foresight Land Services (civil); Sun Engineers (mechanical); Johnson Engineering (plumbing); Race Mountain Tree Services (landscape)*



In contrast to the windowed north facade with the rubber-clad chimney at its west end, the east elevation has cedar siding, a material chosen to evoke the architectural vernacular of local farms.

r site-specific artworks, of which the Office dA building, a weekend use, would be the first.

On the site, extending over more than 30 acres in western New ıgland, half a dozen old farm structures already stood around an oval illage green." Tehrani and Ponce de Leon wanted the house to mine—as ll as undermine—local building traditions. For the east elevation, ıich visitors see from the driveway, and the south facade, which they ss on their way to the front door, the architects chose shiplap and ard-and-batten siding, materials that, Tehrani suggests, "emerge from e language of the farm." The more private north and west facades, how- er, were free to speak languages of the architects' own invention.

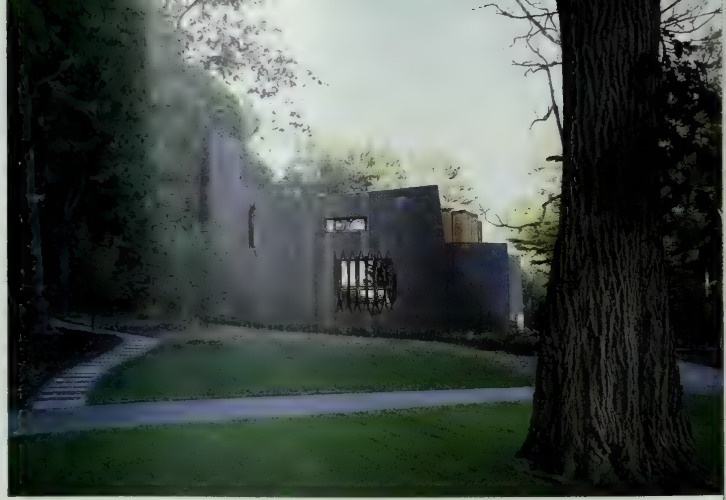
Of course, even the two "contextual" facades are full of sur- ises. The three-story building's east side, deftly camouflaging a trio of rage doors, is largely opaque, but with a bulge (containing the interior irway) that looks as if a seismic shift had created it. The south facade's rizontal siding turns a corner onto this vertically clad east elevation— ie of several instances when the house's architectural effects overlap. At e upper level, the south elevation bends loosely around the three parts a bathroom—the bathtub, sink, and toilet—perhaps in homage to the ea that form could simply follow function.

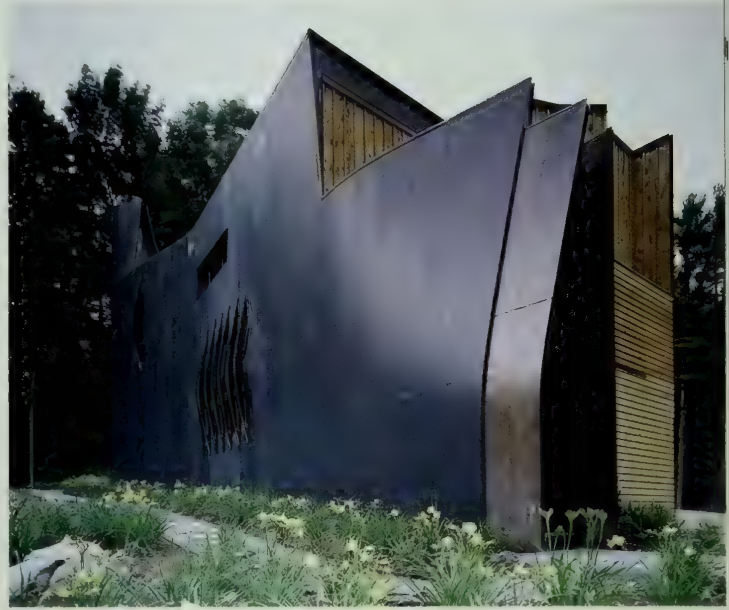
HE OWNERS IMAGINED THEIR LAND AS A LACE FOR SITE-SPECIFIC ARTWORKS— TARTING WITH THE HOUSE BY OFFICE dA.

On the north side, where the view out is the most private— rectly into the woods—the architects created a window system that mbines mullions and exposed floor slabs in a jazzy composition remi- scent of both Mondrian and Mies.

The west elevation, sheathed in black-rubber roofing, isn't rem- iscent of much at all. In more typical applications of this rubber, says hrani, "you'd just heat it up and glue it together; the seams end up where ey end up." But he and Ponce de Leon investigated ways to extract pre- ion from a material that is synonymous with imprecision. To create ilored openings for vertical slit windows, the fabricators, using digitally oduced templates, cut the sheets, stretched them over metal struts, and lded the material back onto itself before securing it with rivets.

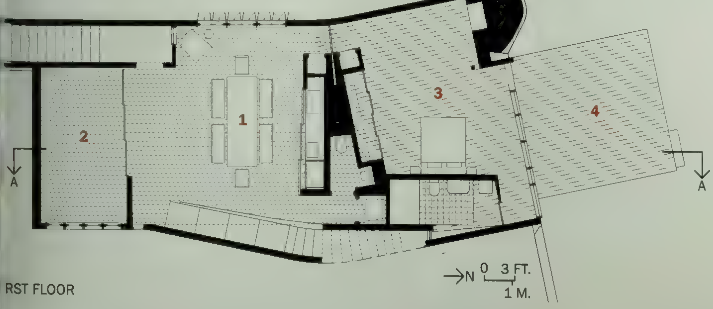
Inside, too, Office dA avoided domestic clichés. Much of the



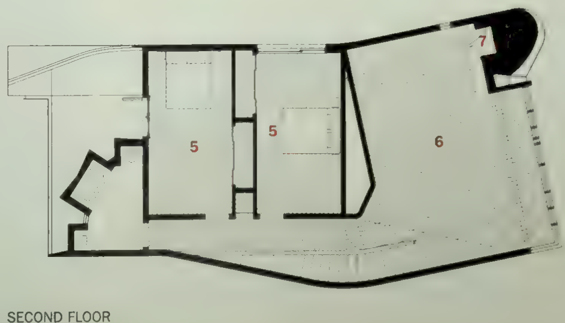


Windows resembling gills (top and above) bring daylight into the dining area. Entry is via an outdoor stair rising between the cedar south facade and rubber west one (above).

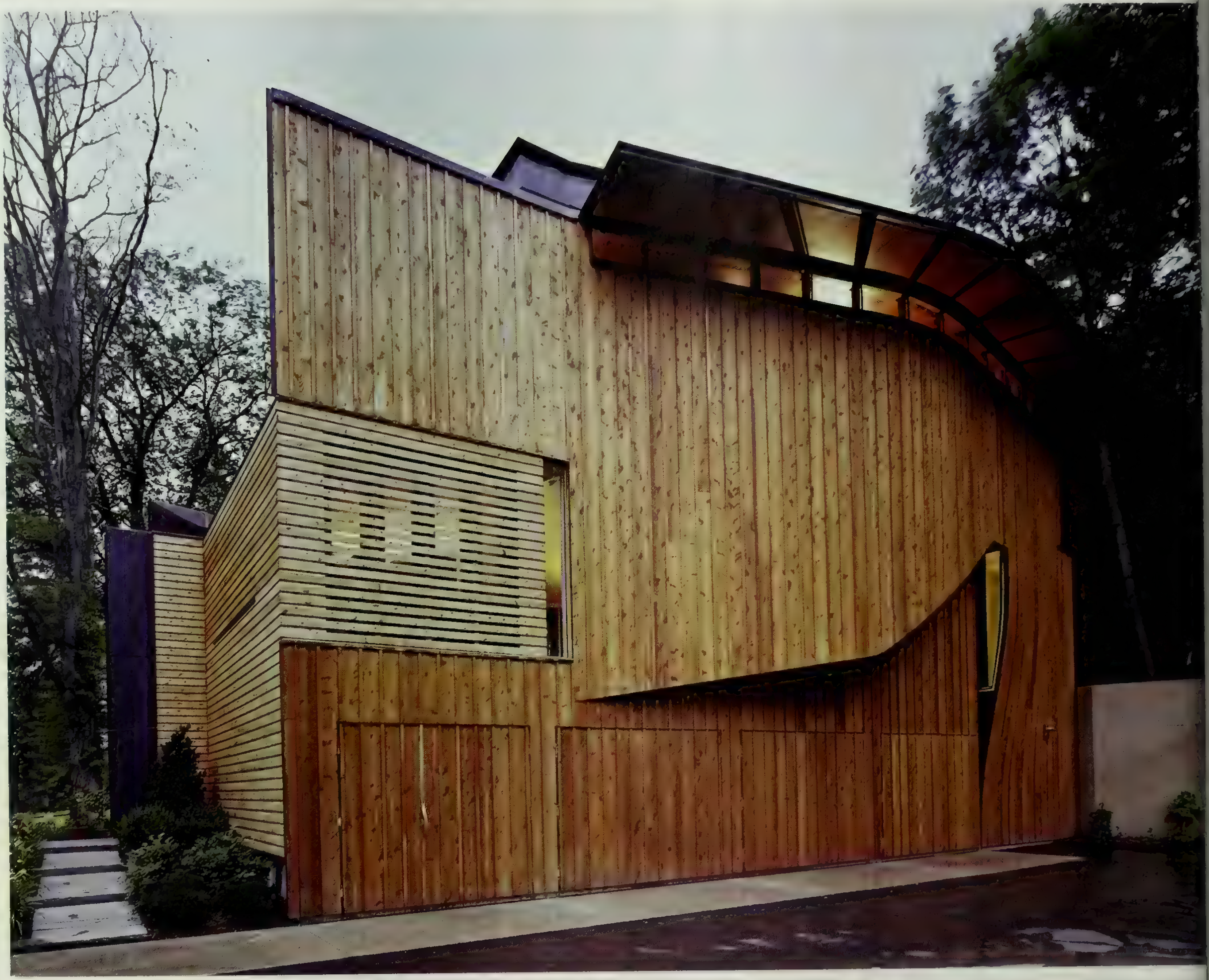
Kitchen/dining
Playroom
Master bedroom
Porch
Bedroom
Living room
Fireplace



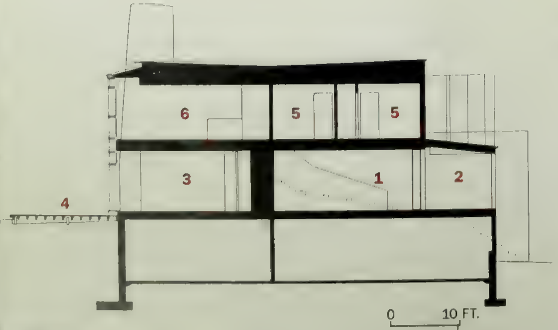
RST FLOOR



SECOND FLOOR



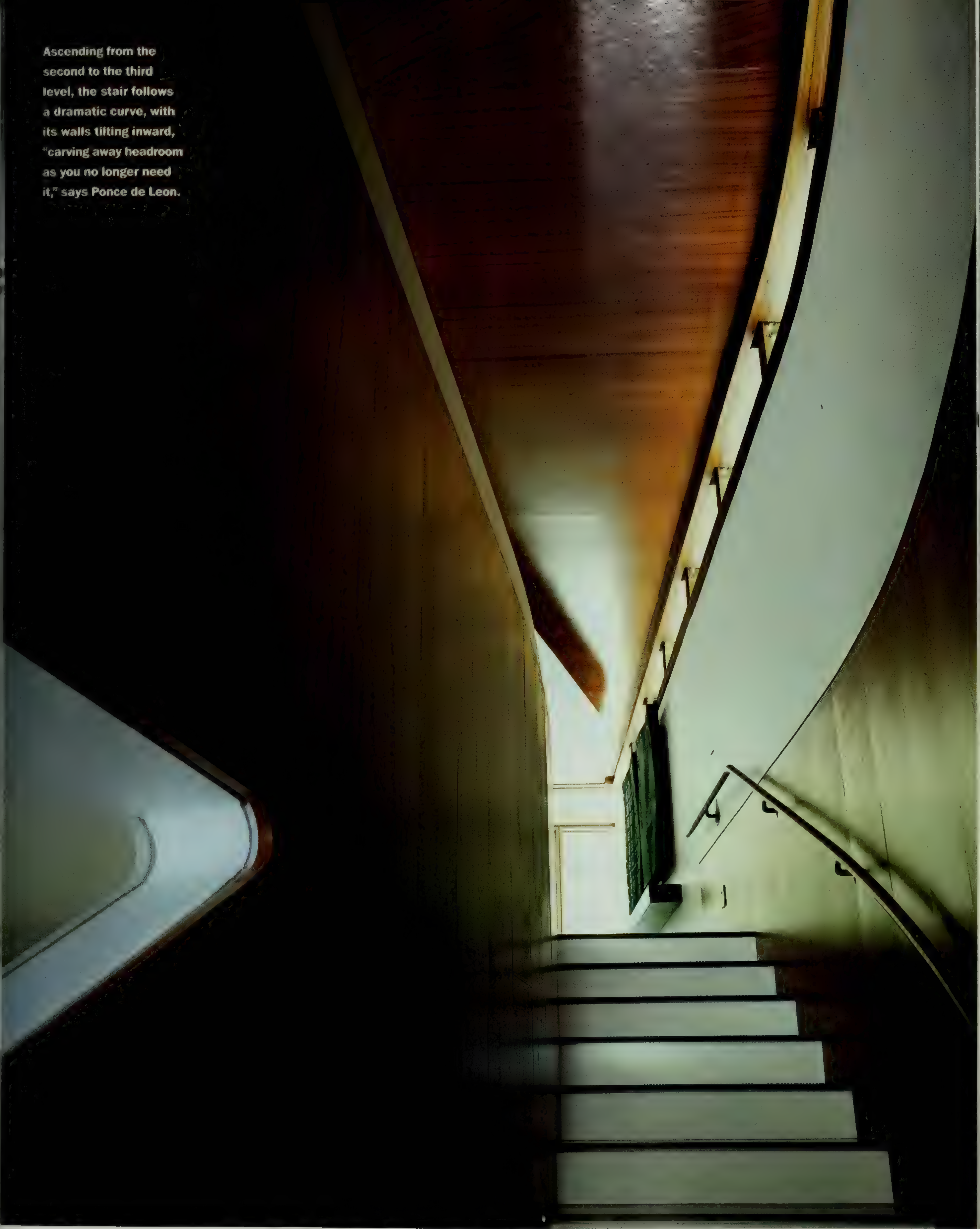
The east facade (above and right) camouflages garage doors. The bulge contains a clerestory-lit interior stair. Where the south facade's horizontal cladding turns a corner (above), it overlaps the east elevation's vertical siding.

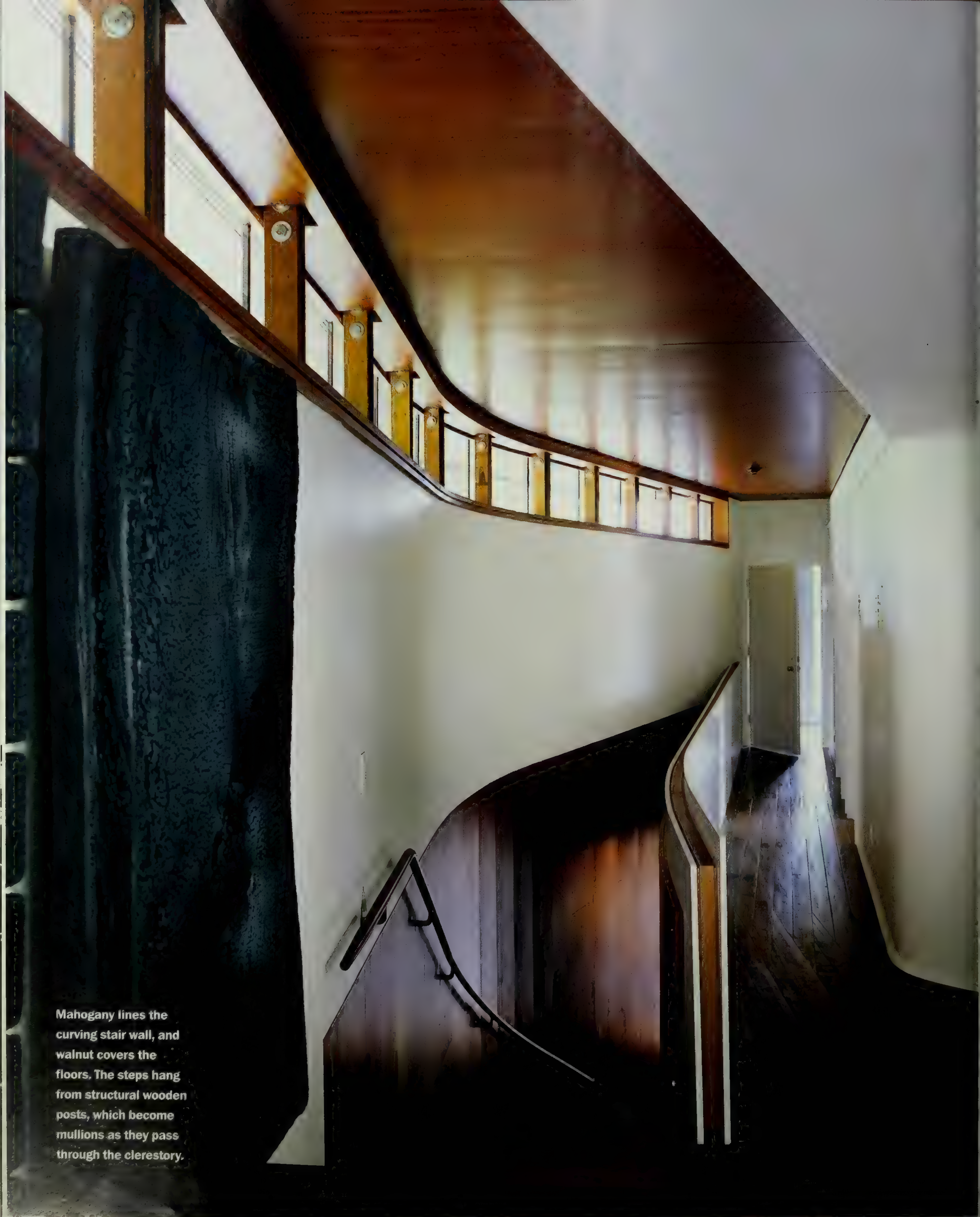


SECTION A-A

1. *Kitchen/dining*
2. *Playroom*
3. *Master bedroom*
4. *Porch*
5. *Bedroom*
6. *Living room*

Ascending from the second to the third level, the stair follows a dramatic curve, with its walls tilting inward, "carving away headroom as you no longer need it," says Ponce de Leon.





Mahogany lines the curving stair wall, and walnut covers the floors. The steps hang from structural wooden posts, which become mullions as they pass through the clerestory.

its proportions and
erlap of vertical and
rizontal patterns, the
ahogany fireplace
rround (below and
ght) suggests a micro-
sm of the house's
utheast corner. The
ing room's synco-
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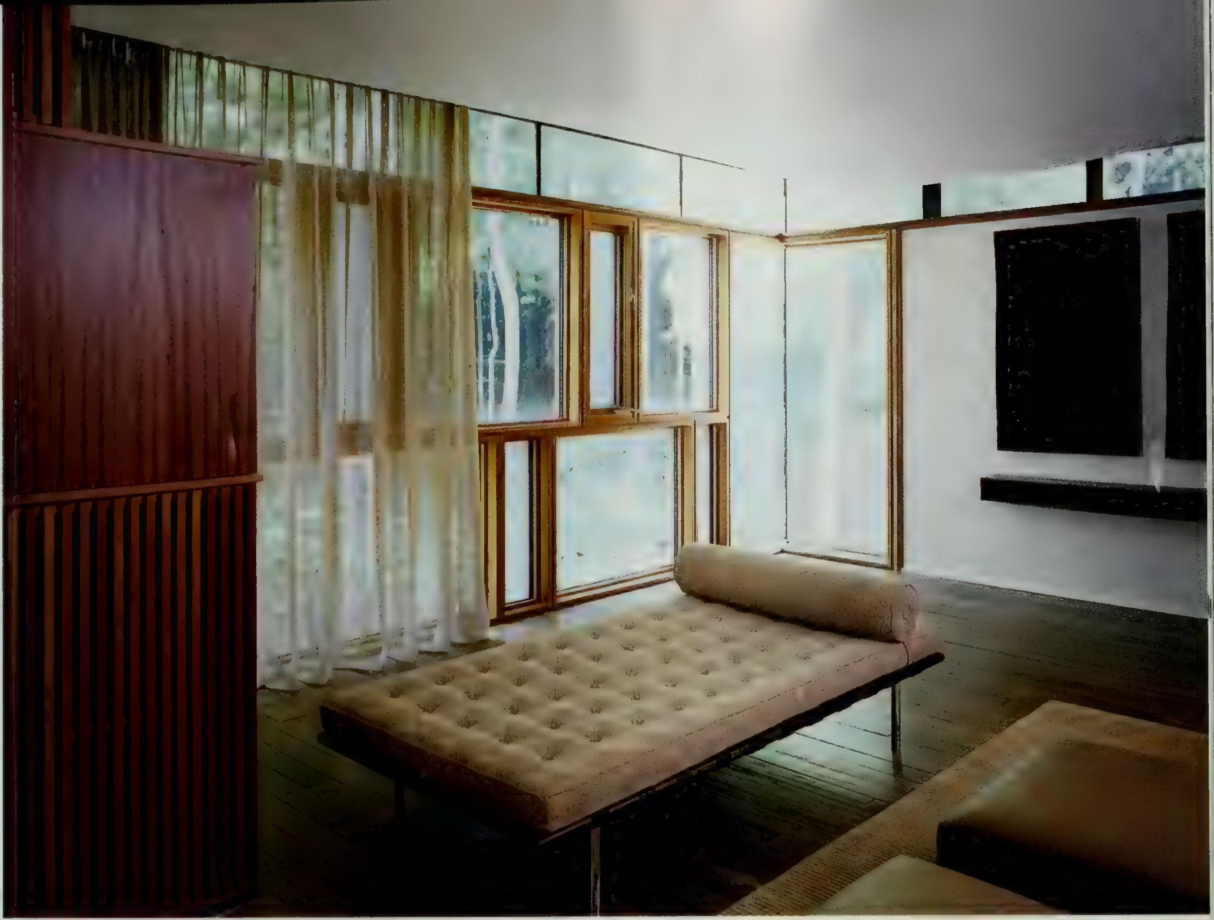
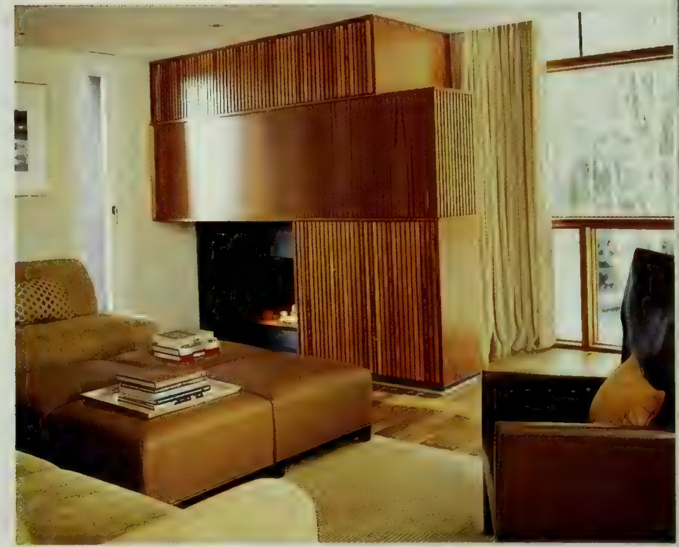
ndows (right) faces
rth, into the woods.
anuel de Santaren
d Carolina Tress-
lsbaugh collaborated
the interior design.



ound floor is relegated to the garage, but the architects didn't permit ything as simple as a door from there to, say, a mudroom. The entry is a an outdoor stairway, where the cedar south facade and rubber west ie peel apart, creating a slit that suggests a journey to the center of the rth. The walls bracketing the stairs tilt in, "carving away headroom as u no longer need it," says Ponce de Leon, explaining one of the moves at show the careful tailoring of plan and section. Making additional ferences to the facades, many of the interior elements (some created in llaboration with Boston designers Manuel de Santaren and Carolina ess-Balsbaugh) seem to bring exterior components inside. A ahogany fireplace surround, for example, suggests, in its composition id overlap of vertical and horizontal patterns, a microcosm of the ouse's southeast corner. Inflected by the exterior cladding, some of the indows look through horizontal wood slats, while others are pinched bands of rubber.

And the stairway, which leads from the second to the third oor, includes treads and risers that are rarely uniform. That's because is flight bows out from the east facade, mimicking the curves of the village green and placing the stair, as the architects say, "conceptually itside the building." With nothing supporting the steps from underneath, these elements hang from wooden posts, which double as ullions where they pass through clerestory windows. It is a structural ur-de-force.

Not a tour the architects are likely to take a second time. And now at they know how to whip rubber into shape, Tehrani and Ponce de Leon hose current projects include an apartment building in Boston) have no mediate plans to attempt it again. After all, they have new puzzles to lve. Rubik—himself a professor of architecture—would approve. ■



Sources

Curtain wall: *Duratherm*

Rubber cladding: *Firestone*

Windows: *Marvin; Duratherm; Lou Boxer (custom)*

Paints and stains: *Benjamin Moore*

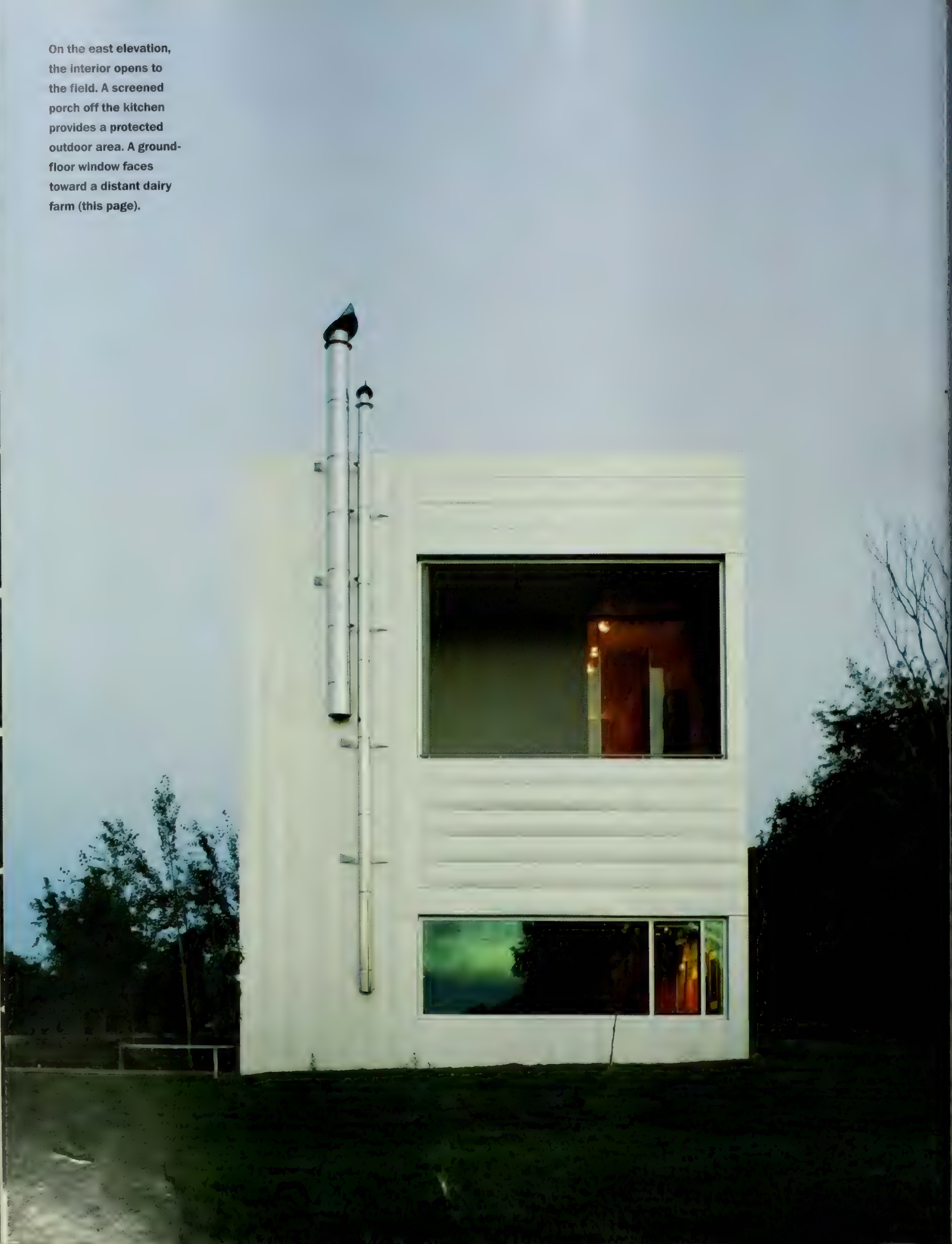
Lighting controls: *Lutron*

Tile: *Dal-Tile; American Stone; Discover Tile*

Hardware: *Baldwin; Rocky Mountain; Richard Wilcox*

For more information on this project, go to Projects at **www.archrecord.com.**

On the east elevation, the interior opens to the field. A screened porch off the kitchen provides a protected outdoor area. A ground-floor window faces toward a distant dairy farm (this page).



Taking cues from Wisconsin dairy barns, Wendell **Burnette** shapes the **FIELD HOUSE's** simple, silvery form

y **Jane F. Kolleeny**

Siting his house amid the large dairy barns, grain silos, and humble homesteads that speckle the rural landscape of tiny Ellerton, Wisconsin, Dr. Robert Geller did not want the neighbors viewing him as intrusive, building a colossal mansion. But, as he told his chitect, Wendell Burnette, AIA, he definitely wanted a Modernist home. ne result: a 5,000-square-foot, zinc-galvanized-aluminum box, inspired by e farm structures on the surrounding fields, which extend like checker- ards across the vast, predominantly flat landscape. The spare, elongated terior of this building, called Field House, reinterprets the utilitarian aes- etic of the agrarian terrain, complementing rather than overshadowing its ighbors. Beyond the house's apparent simplicity, however, a refinement in tail and overall composition gradually reveal themselves.

In this part of eastern Wisconsin, the landscape changes vividly ith the seasons. During the spring, verdant fields of rotating crops rout up, providing fodder for cattle in their growing season. In winter, ose same fields turn into a frigid, white expanse. The client, an oncolo- st, asked for a peaceful retreat that could provide solace from his gh-stress job. At the outset of the project, he wrote a brief, succinctly tlining his desire for a home attuned to the "land, sky, and seasons." terpreting this directive, Burnette says he envisioned a house that would llow a dialogue with the changing light and times of year—a place that ould not be overtly expressive, but instead, recede into the landscape."

Turning the building away from the harsh winter winds and ening it to the southerly sun, Burnette positioned Field House on the rthwest corner of a 16-acre crop field, which a local farmer leases and nds. Reached by the owner's straight, ¼-mile-long access road and nestled to existing rows of trees along the property's edge, the building offers th privacy and spacious views. While discreet windows to the north (the use's back) and the east frame vistas of far-off dairies, the south elevation ens more expansively toward the field, the sky, and distant farms.

From afar, the structure appears as a simple, silvery rectangle. ore closely examined, its long south facade reveals 16-inch-wide panels of

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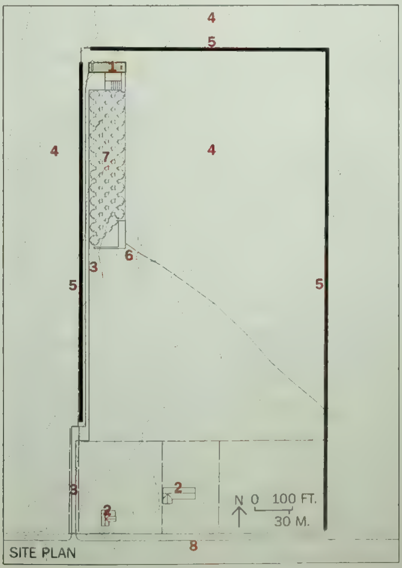
oject: *Field House, Ellerton, isconsin*

chitect: *Wendell Burnette chitects—Wendell Burnette, AIA, ott Roeder, Matthew Trzebiatowski, A, Joe Herzog, design team*

Engineers: *Rudow + Berry (structural); Thelen Engineering (mechanical); Harwood Engineering (electrical); Point of Beginning (civil)*

Consultants: *Michael Boucher Landscape Architects (landscape)*

For the exterior, the architect chose an off-the-shelf industrial siding system for its durability and low maintenance. When viewed from the main road, the aluminum box shimmers in the sunlight (above).



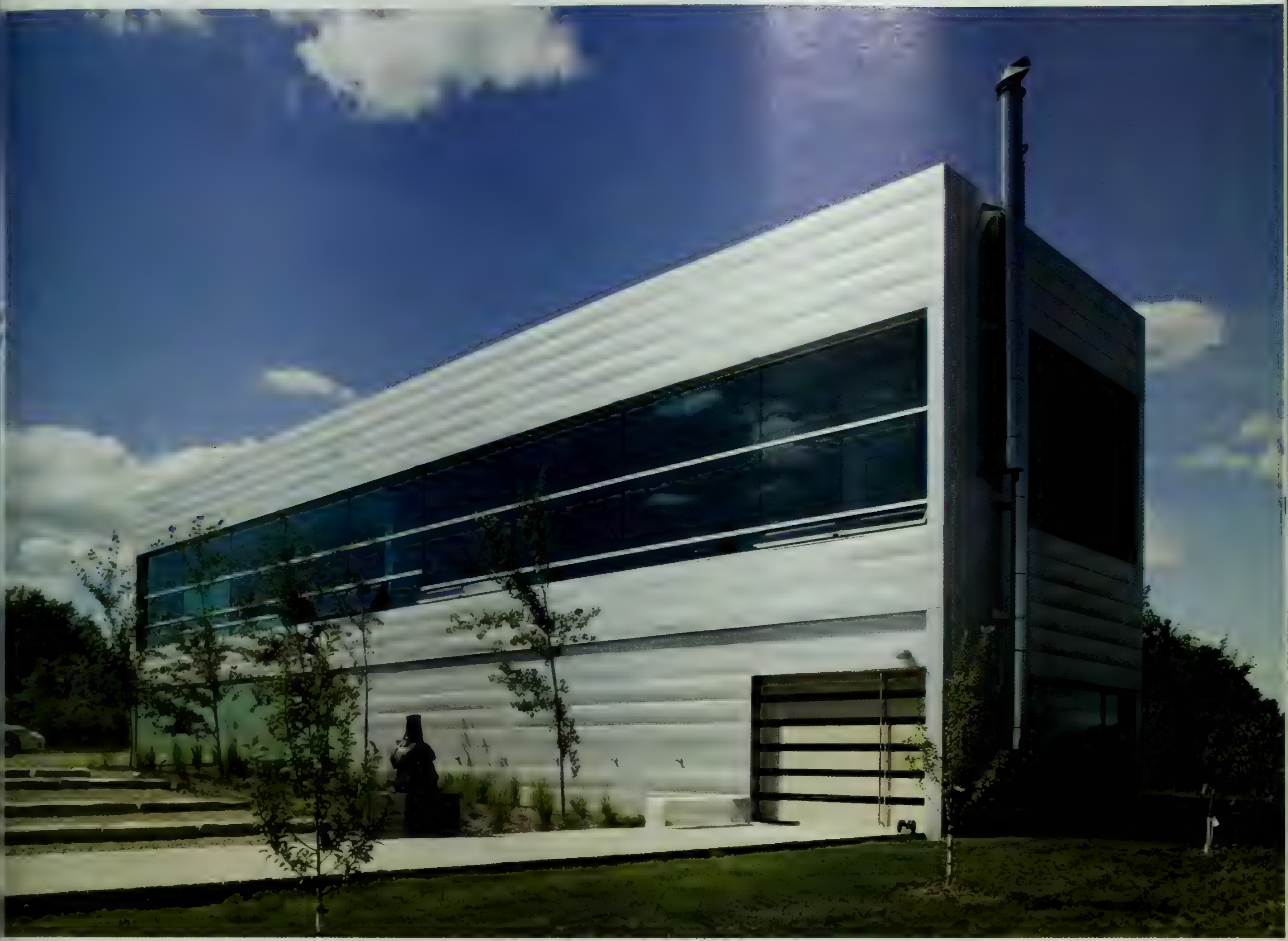
1. *Field House*
2. *Existing buildings*
3. *Access road*
4. *Crop field*
5. *Tree line*
6. *Wetlands area*
7. *Apple orchard*
8. *Main road*

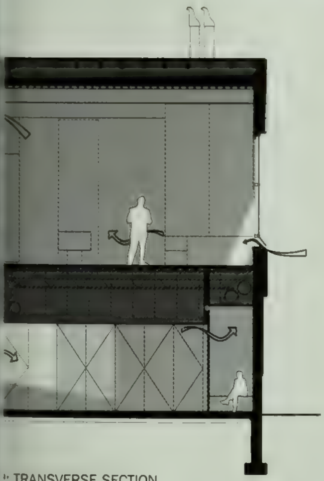
The front, or south, facade features bands of aluminum siding against an expansive panoramic window and a garage door of laminated glass (top). The house nestles into the northwest corner of a crop field (bottom).

metal cladding in parallel bands, reinforced by an aquamarine-tinte panoramic window that extends horizontally across this entire front elevation on the second floor. Geller says low clouds reflect so perfectly in thi window that he sometimes feels as if he is driving into the sky whe approaching from the access road. The banding continues at grade, where, a this elevation's west end, oversize sliding doors of laminated glass provid access to the garage and a pottery studio and where, at the main entrance t the east, a sliding plane of cedar panels continues the barn-door theme.

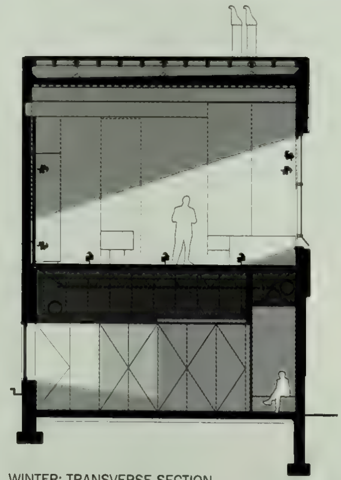
Inside, the long entry hall is dark and cavelike, its walls clad in ra steel, with doors that open inconspicuously to guest quarters, as well a laundry and media rooms, all at grade. Upstairs, in the living/dining/kitche area, 16-foot-high ceilings, floor-to-ceiling glazing, and a loftlike open pla welcome abundant light and the imposing presence of the field outside.

Everywhere, but especially in the main living area, it becomes evident that the owner and architect have fused their visions to create a spac where architectural details play counterpoint to the client's art and furnitur collections. The interior's clean, simple lines and unadorned materials— black-stained, poured-in-placed concrete floors, black-walnut kitchen cabinets with stainless-steel countertops, exposed concrete block, and whit interior walls—set the stage for the bright accents of Geller's colorful ar objects. It's as if a New York City loft had found its way serendipitously ont





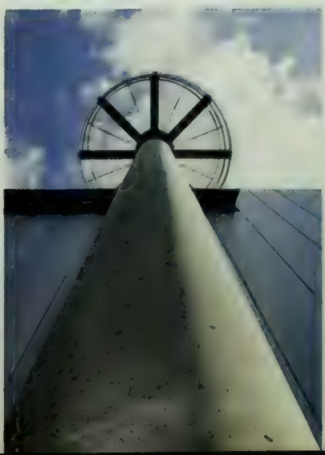
TRANSVERSE SECTION

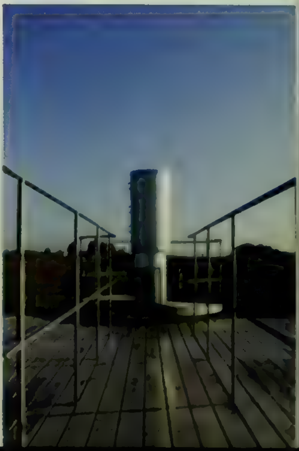


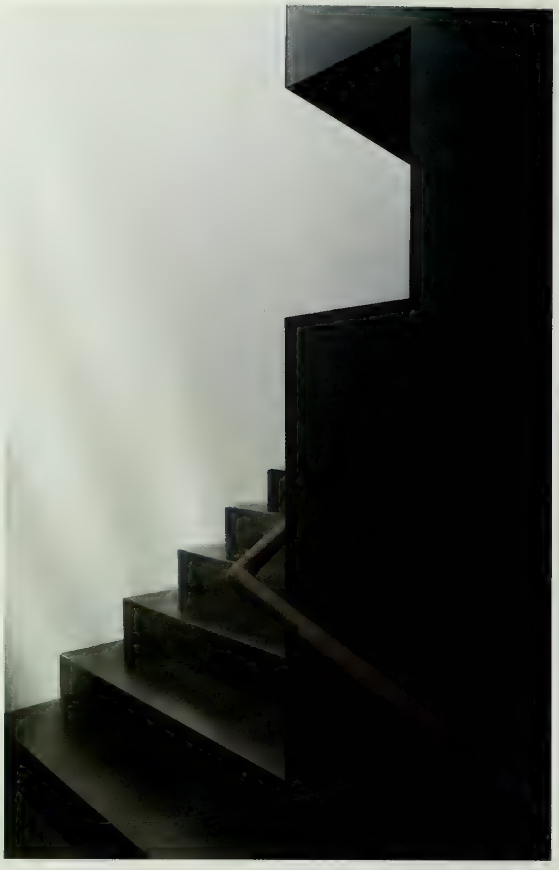
WINTER: TRANSVERSE SECTION

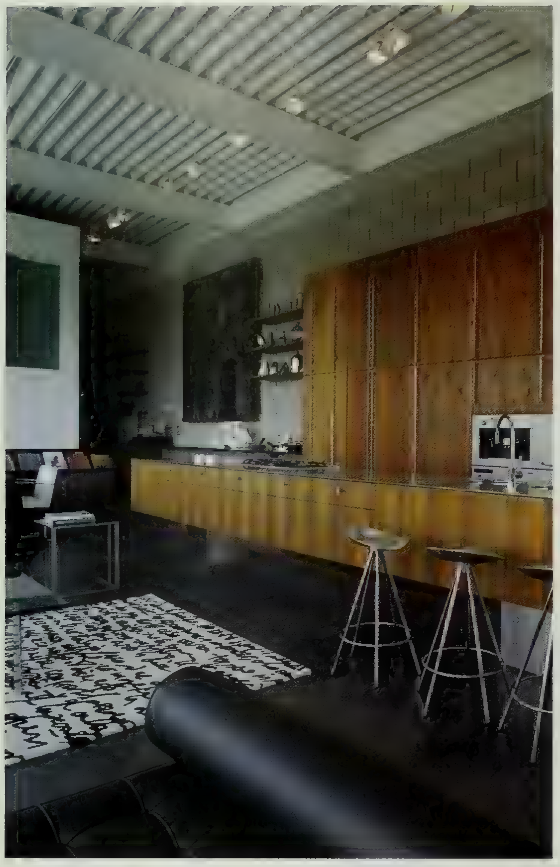
warm weather, hot exhausts through nts near the second- or ceiling, and fresh enters at grade (above left). In winter, the masonry absorbs the day's heat and radiates it to the interior at night (above right).

At the entrance, a bronze sculpture by Peter Voulkos, called *Big Ed*, greets the visitor (above). From the study, a silo ladder leads up to the rooftop's cedar deck (below right), which floats above the actual roofing, protecting it from moisture. A telescope on the deck offers access to the night sky. Chimneys with rotating cowls at the top vent the fireplaces (above at right and below left).

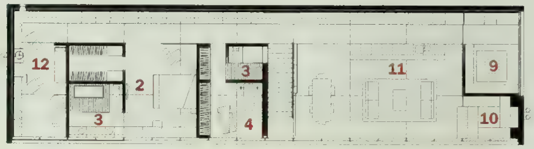




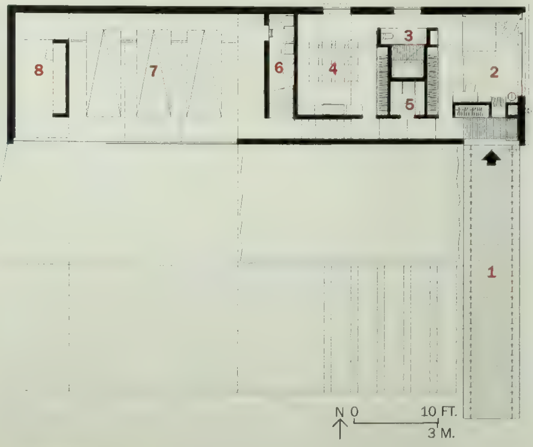




The stairway up to the second floor turns sharply right from the ground-floor entrance hallway (far left). The living/dining/kitchen area displays ceramics, abstract paintings, and a collection of tea services (near left).



UPPER FLOOR



LOWER FLOOR

1. *Front deck*
2. *Bedroom*
3. *Bath*
4. [illegible] *room*
5. *Laundry*
6. *Mechanical*
7. *Garage*
8. *Pottery studio*
9. *Screened porch*
10. *Firepit*
11. *Living/dining/kitchen*
12. *Office*

this rural terrain, displaying sophistication within a self-effacing form. Bu the interior still references this landscape, especially the black floors, whic the architect says he chose "to match the black earth of Wisconsin."

A corridor lined with walnut shelving for art, books, and artifact runs along the back of the house, providing access to the exercise room master suite, and study, all oriented to the front of the building. Glimpse through the doorways out to the fields punctuate this hall, further connecting the interiors with the landscape, both spatially and visually.

Outside, a protected wetlands area cuts through the field where in warm weather, a stream flows lazily, indigenous wildflowers bloom and pheasant, fox, deer, and opossum make a home. Here, between th wetlands and the house, the owner and architect found a place to plan an apple orchard. "It will, of course, mature over time," says Burnette "creating an alley for the entry drive, effectively extending the house' threshold, so that the building and the field are revealed more slowly."

Field House's spare forms pay tribute to the farms, the sky, th prairie, and each season's distinctive mood. The rotating crops—corn soy, or sometimes oats—sown by the farmer, retexture the land through out the year. The evolving field defines and redefines the house, becomin the most important marker of change. ■

Sources

Exterior cladding: *Morin (Galvalume-Plus)*

Glass curtain wall: *Kawneer*

Aluminum windows: *Kawneer; ClearLine*

Wood doors: *Discher Architectural Woodwork/Miron Construction*

Sliding doors: *Omni Glass/Miron Construction*

For more information on this project go to Projects at **www.archrecord.com**.

ving Mies van der
leather furniture
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n space, with
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and a hearth on
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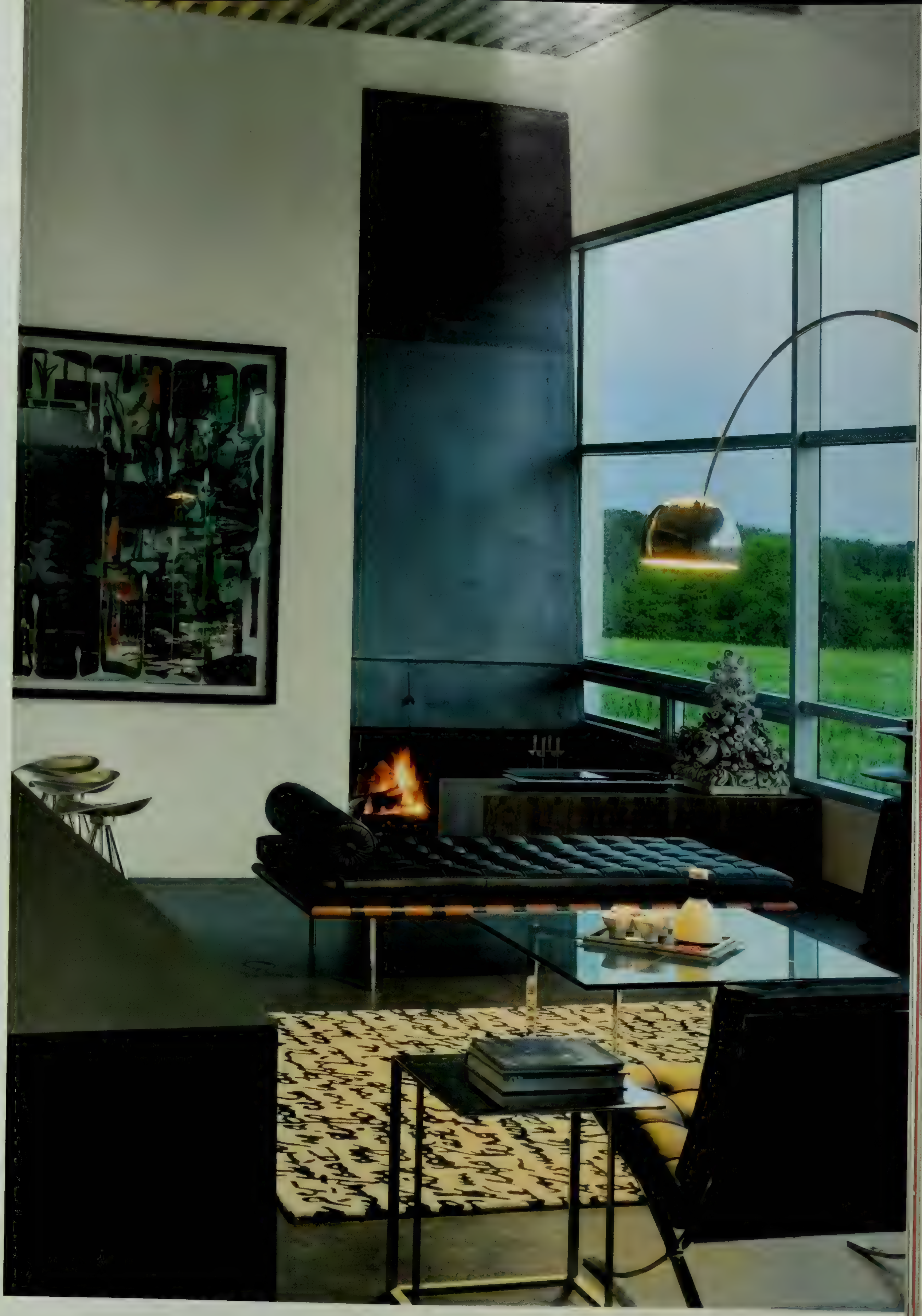
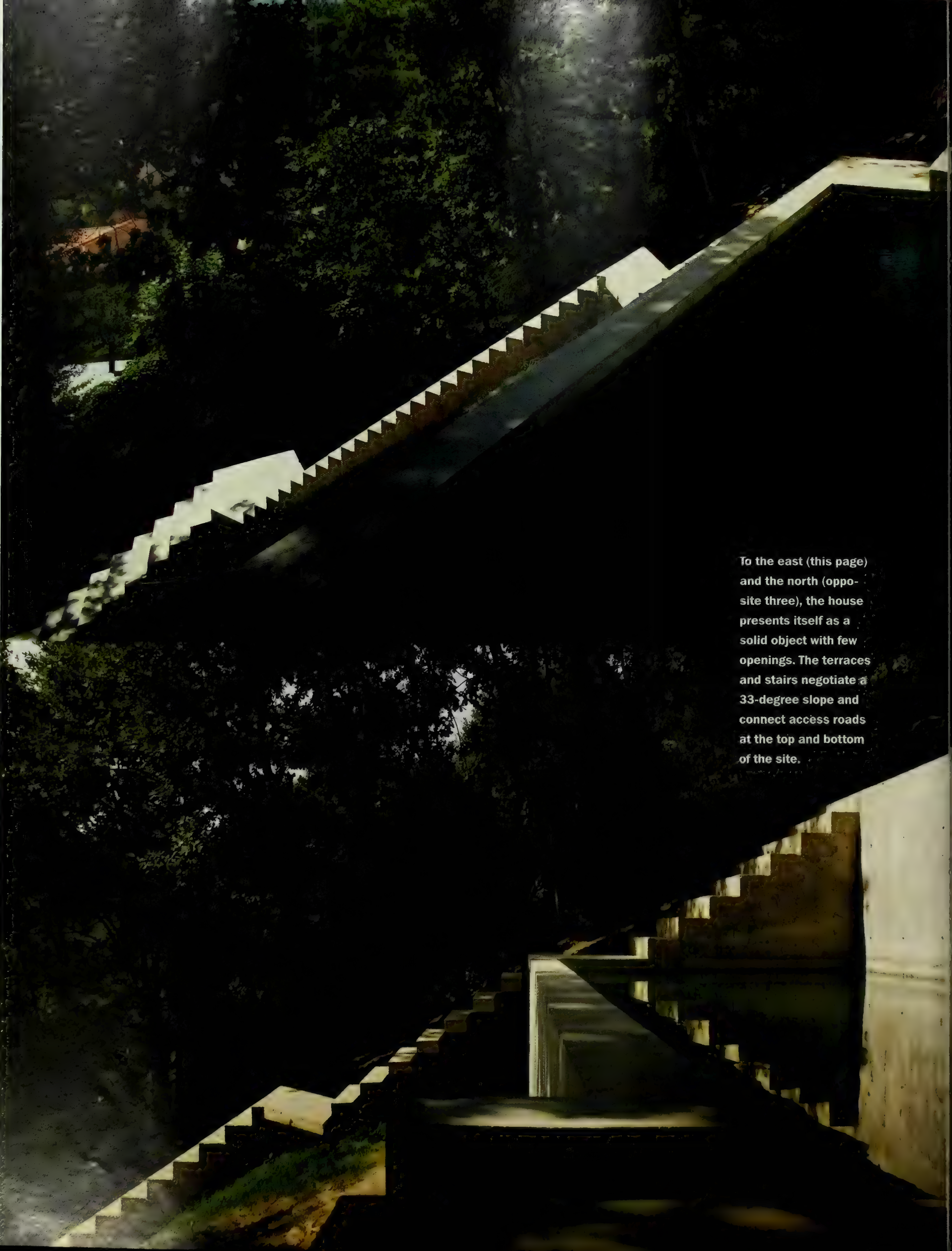
for intimate gath-
(right).

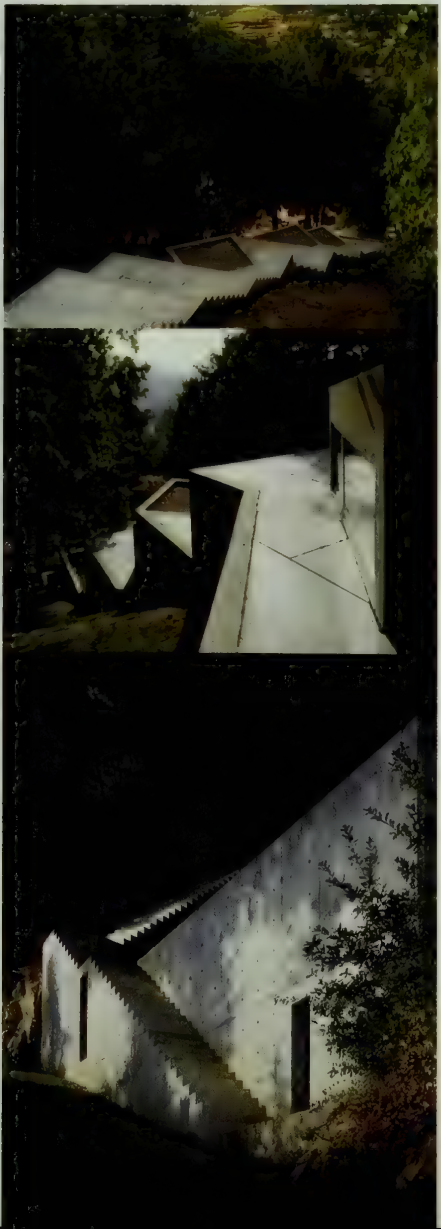




To the east (this page) and the north (opposite three), the house presents itself as a solid object with few openings. The terraces and stairs negotiate a 33-degree slope and connect access roads at the top and bottom of the site.

In northern Portugal, Alvaro Leite Siza Vieira cascades CASA TOLO down a steep slope through terraced gardens

By Clifford A. Pearson

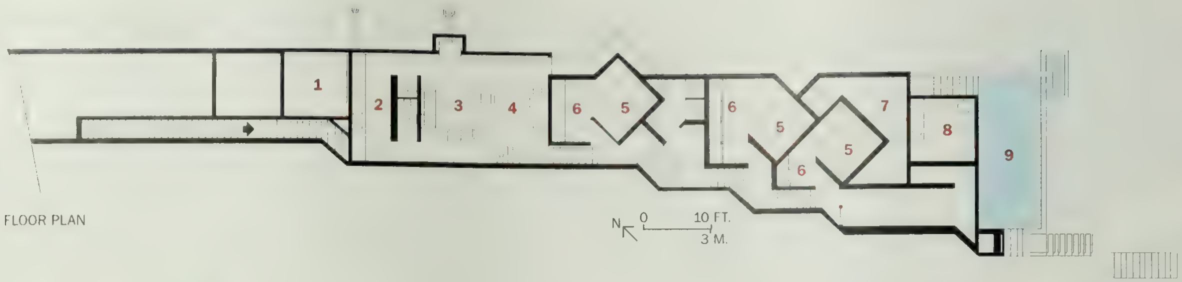


From certain vantage points, it looks like a relic from an ancient civilization, maybe an exposed portion of a stepped pyramid or some kind of Mayan monument. Partially buried in a steep hillside in the rural Vila Real district of northern Portugal, the Casa Tóló presents itself as a Jimmy Stewart kind of character: self-effacing at first, but then increasingly bold. Instead of a front facade, it offers merely a concrete deck, jutting out over the edge of a 33-degree slope with a view of mountains in the distance. To learn more, you must descend a set of stairs recessed in the deck, an act of faith since so little of the architecture has been revealed so far. As you move forward, you realize the house is a path, both literally and figuratively, taking you on a walk through the woods and unfolding in section as much as in plan.

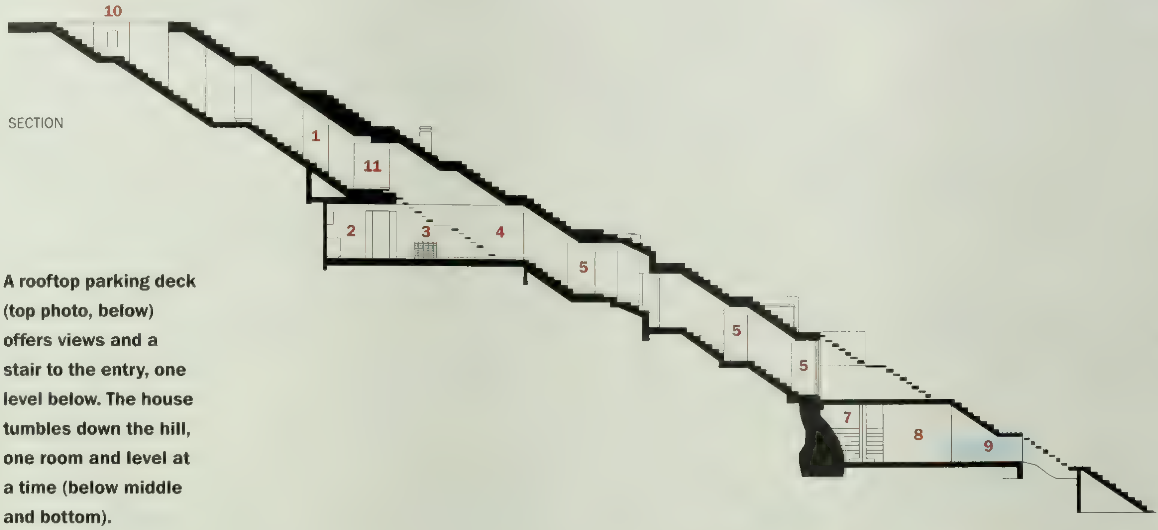
Neither a Modern box nor a series of pavilions, Casa Tóló tumbles down the hill, a concrete cascade that seems more like pavement than domicile. Designed by Álvaro Leite Siza Vieira, son of the Pritzker Prize–winning architect from Porto, the house serves as the weekend retreat for the architect's cousin, his wife, and two children. With a difficult plot of land and a very tight budget (just $150,000 for construction and another $3,000 for landscaping), the client offered the architect little but constraints. Siza turned these limitations into assets by highlighting instead of hiding them. For example, the long, steep, ¼-acre site, he says, made a narrow, stepped plan "practically inevitable." But how many architects would take the concept of stairs so literally?

Siza, who set up his own small firm in 1992, shortly after graduating from architecture school, traveled in the United States that same year and again in 1997. "I saw a lot of Frank Lloyd Wright's buildings and some of Louis Kahn's," he recalls. "I loved the way both of them manipulated scale and light." Like some of the early Wright houses in Oak Park, Illinois, Casa Tóló lives bigger than its size—just 1,950 square feet. By establishing integral connections between indoors and out, and orchestrating daylight to animate interiors (instead of flooding them), Siza boosted the impact of this small house. He designed the roofs as a series of gardens, which turns these spaces into outdoor rooms. A swimming pool occupies the lowest terrace, while other levels offer areas for

Project: *Casa Tóló, Lugar das Carvalhinhas, Alvite, Portugal*
Architect: *Álvaro Leite Siza Vieira Architect*
Engineer: *GOP/Gabinete de Organização e Projectos*
General contractor: *Oscar*



FLOOR PLAN



SECTION

1. *Office*
2. *Kitchen*
3. *Living*
4. *Dining*
5. *Bedroom*
6. *Dressing*
7. *Laundry*
8. *Mechanical*
9. *Swimming pool*
10. *Parking*
11. *Entry hall*

A rooftop parking deck (top photo, below) offers views and a stair to the entry, one level below. The house tumbles down the hill, one room and level at a time (below middle and bottom).

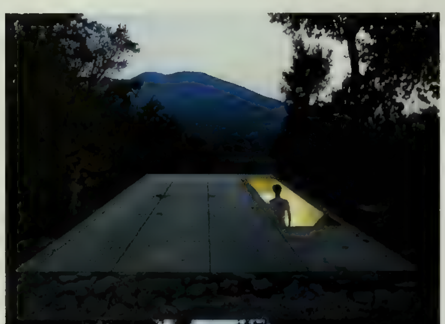
sitting, sunning, and even outdoor showering.

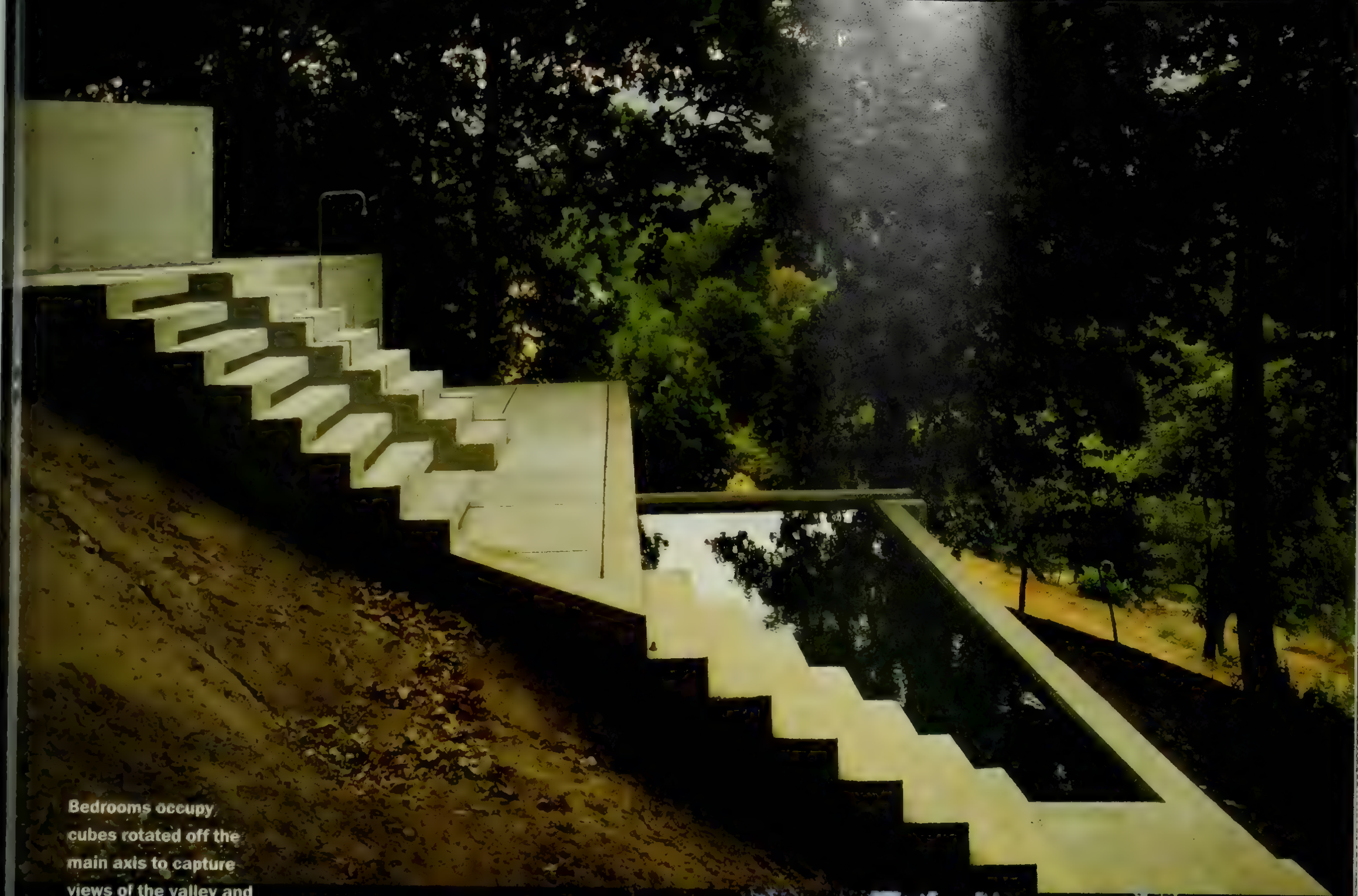
The architect pushed the house into the hillside to save money during construction and reduce expenses for heating and cooling later on. A simple, poured-concrete structure, it was easy to build. Precast-concrete pavers, each 3.3 feet square, clad the roofs, adding an extra layer of protection from the elements.

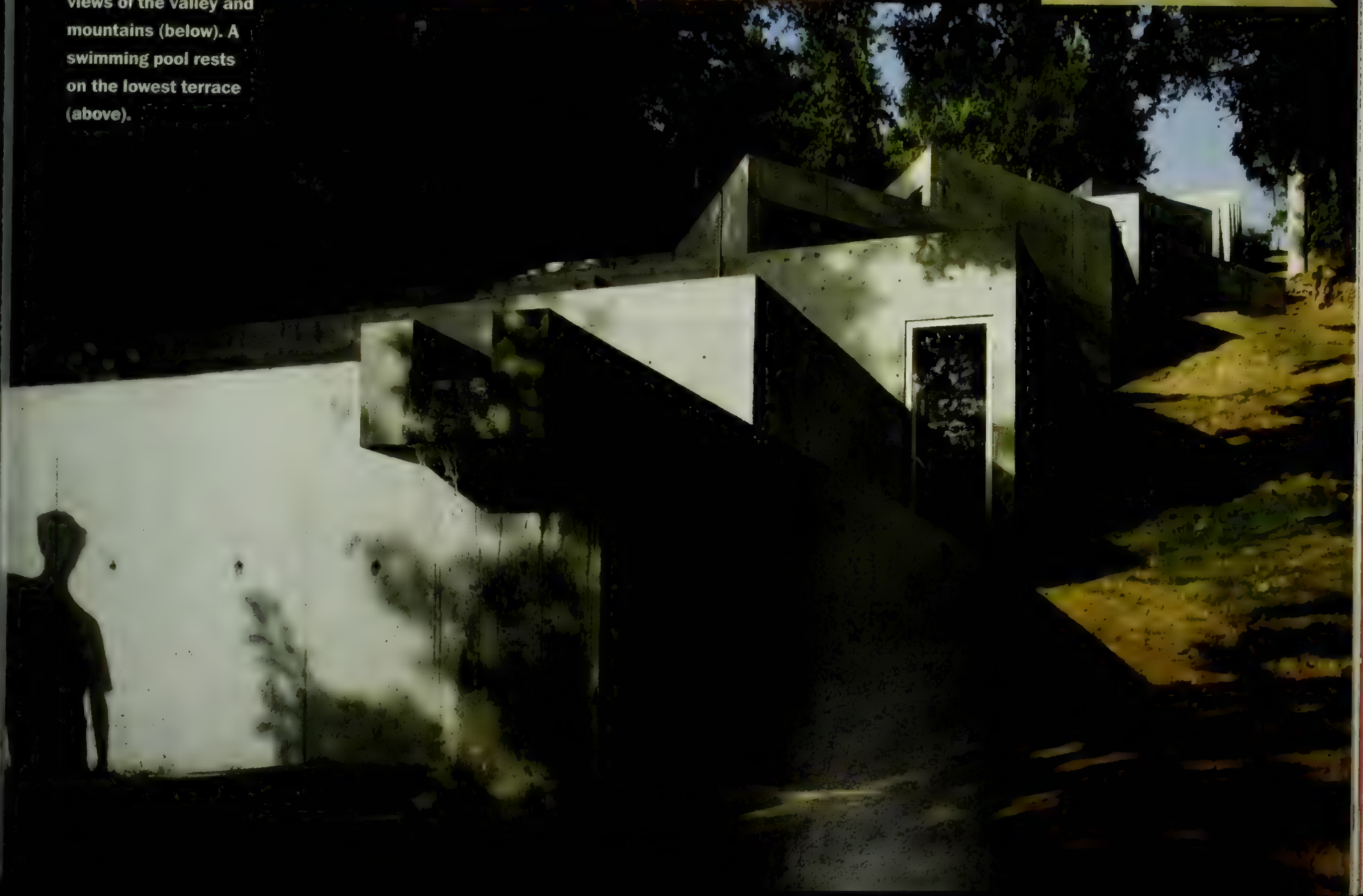
While it's immediately clear the house is all about stairs, you can't always see where they're headed. Most people arrive from the north, parking their cars on the house's uppermost roof. (A rustic footpath runs along the south edge of the site.) To get inside, you must descend the recessed stairs in the parking deck, going a full flight before arriving at the front door. Once inside, you encounter a long run of stairs, but later only fragments. "When I was young, I loved looking at drawings by Escher and Piranesi," recalls Siza. With Casa Tóló, he says, he wanted to make games of the stairs, creating ambiguity about what's going up and what's going down. Taking advantage of the sloped site, the architect placed each major function on its own level, starting with an office at the top, then dropping down to the living/dining/kitchen area, a bedroom, a second bedroom, a third bedroom, and finally a laundry and mechanical room. Each level enjoys its own outdoor space on the roof of the room below.

WHILE IT'S IMMEDIATELY CLEAR THE HOUSE IS ALL ABOUT STAIRS, YOU CAN'T ALWAYS SEE WHERE THEY'RE HEADED.

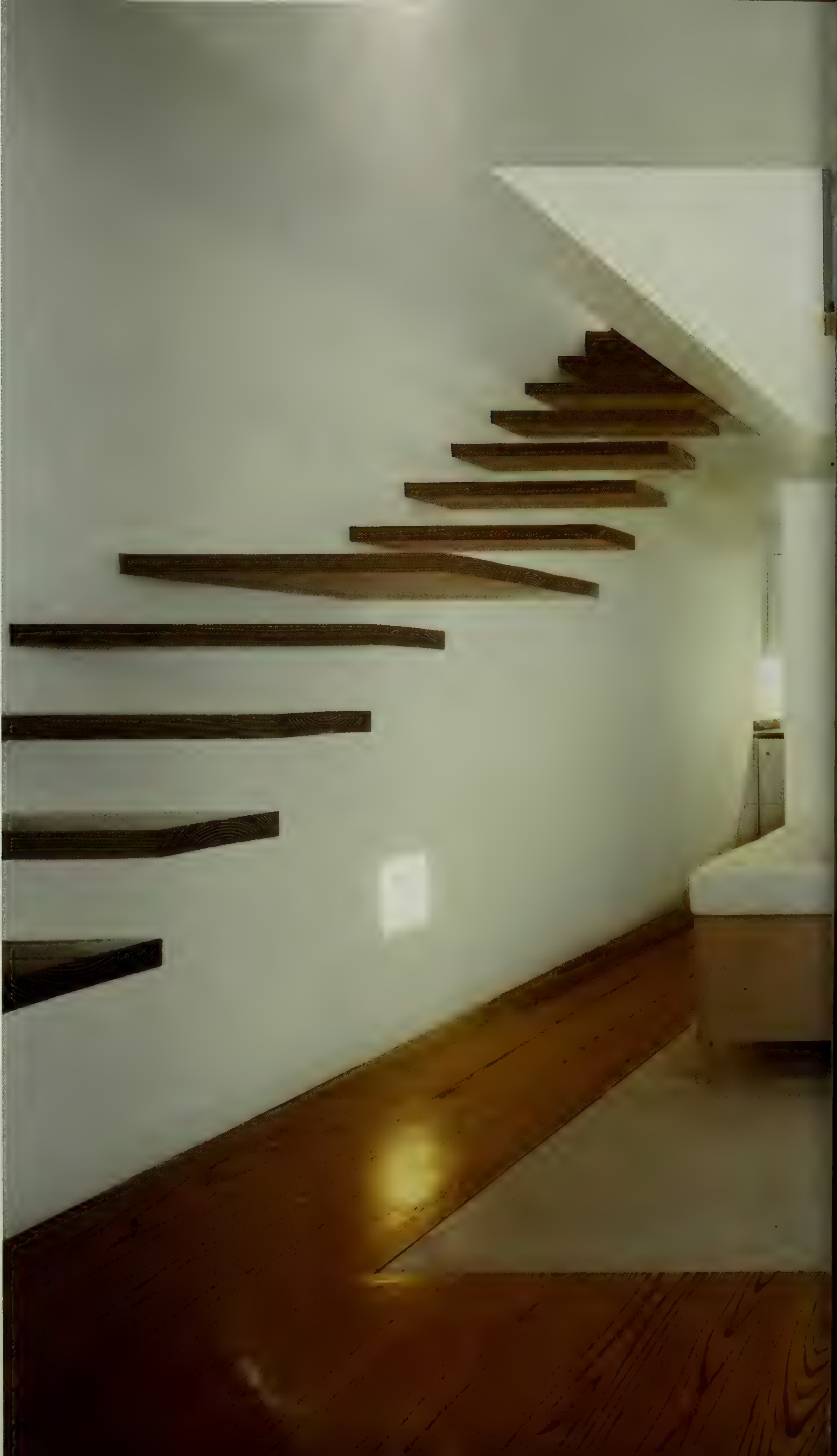
Siza's use of light reinforces his games with stairs. In the living room, he brings in daylight from a high transom whose source is obscure, giving the space a touch of mystery. In the bedrooms—three individual cubes turned 45 degrees from the main stair axis—his strategy is more



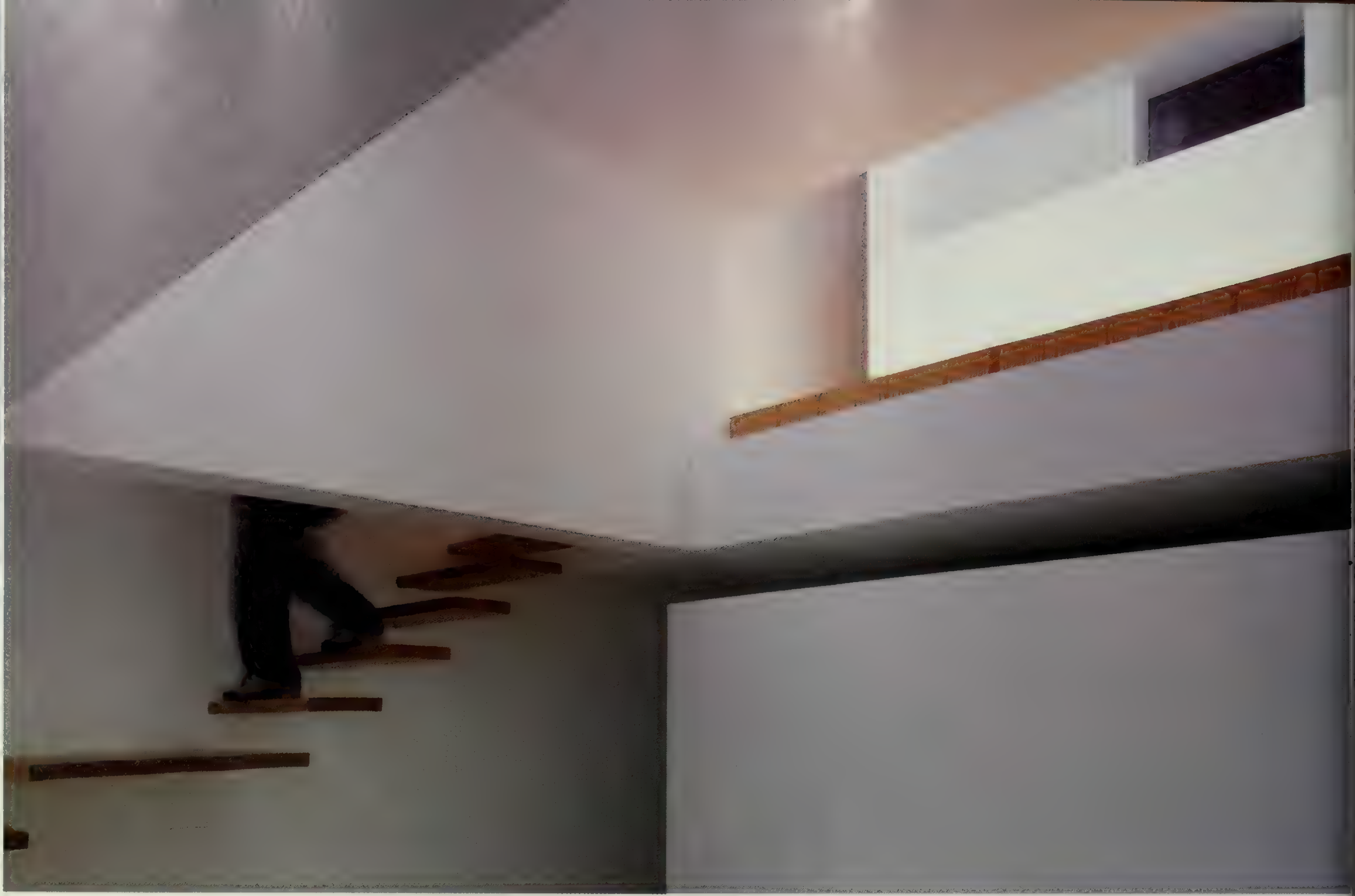




Bedrooms occupy cubes rotated off the main axis to capture views of the valley and mountains (below). A swimming pool rests on the lowest terrace (above).



In the living room, a large, north-facing transom window, bringing in suffused light, and a set of railless, wood stairs, cantilevered from one wall, give the space a floating quality. Siza designed the sofas himself to complement the house's simple materials and the other spare furnishings.



Inspired by the drawings of M.C. Escher and Giambattista Piranesi, Siza plays a visual game with the stairs, sometimes revealing long views of them (opposite), and other times obscuring where they lead (above and below), creating an aura of mystery.

direct: Provide large panes of glass oriented to views of the valley below and mountains beyond. The interior surfaces are of either white cement or lightly stained wood, a simple palette that was easy on the pocketbook and makes the house look bigger and brighter. During construction, his cousin was concerned that the house would be dark because it pushes into the slope without windows on the west and only one facing north. But, as the architect sees it, less was enough.

When asked if his father's architecture had an impact on his own, Siza says, "Everyone in Portugal is influenced by him. But I worked for him only one summer when I was a student and later only collaborated with him on a few projects. My work is autonomous from his."

With no front facade and a form that almost disappears into the hillside, Casa Tóló defies expectations. Though hardly ideal for the elderly or disabled, the house offers a lively sequence of spatial experiences created by the play of solids and voids, indoors and out. When described, it sounds preposterous, an intellectual conceit. But Álvaro Leite Siza Vieira has made a building of stairs work as a house—one that engages its site and actually lets people live on top of each other without getting in one another's way. ■

Sources

Elastomeric roofing: *Sotecnisol*

Aluminum windows: *Velfac*

Locksets and hinges: *Carvalho e Baptista*

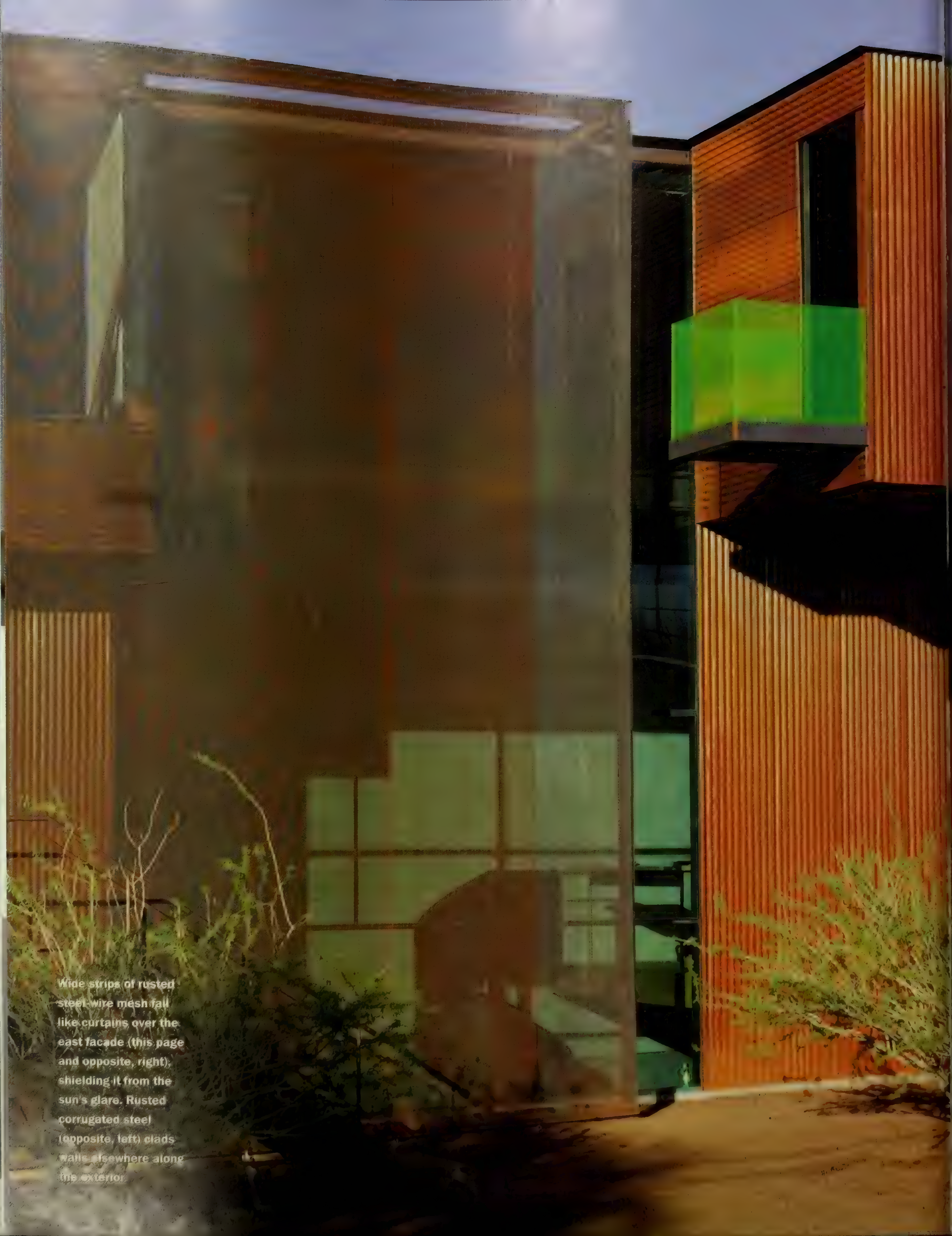
Pulls: *Designed by Álvaro Leite Siza Vieira for Carvalho e Baptista*

Sofas: *Custom by Álvaro Leite Siza Vieira*

Sinks and toilets: *Valadares*

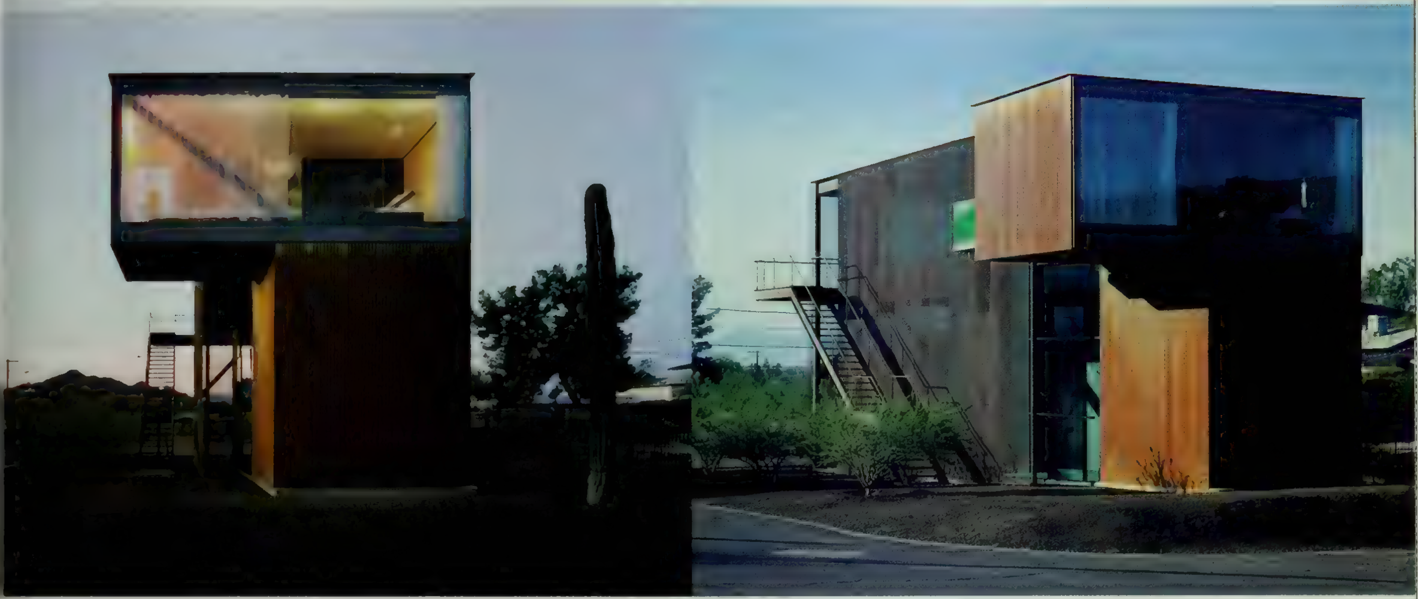
Refrigerator and kitchen appliances: *Siemens*

For more information on this project, go to Projects at **www.archrecord.com.**



Wide strips of rusted steel-wire mesh fall like curtains over the east facade (this page and opposite, right), shielding it from the sun's glare. Rusted corrugated steel (opposite, left) clads walls elsewhere along the exterior.

Wrapping **XEROS RESIDENCE** in a veil of rusted steel, **Blank Studio** borrows hues from the desert landscape



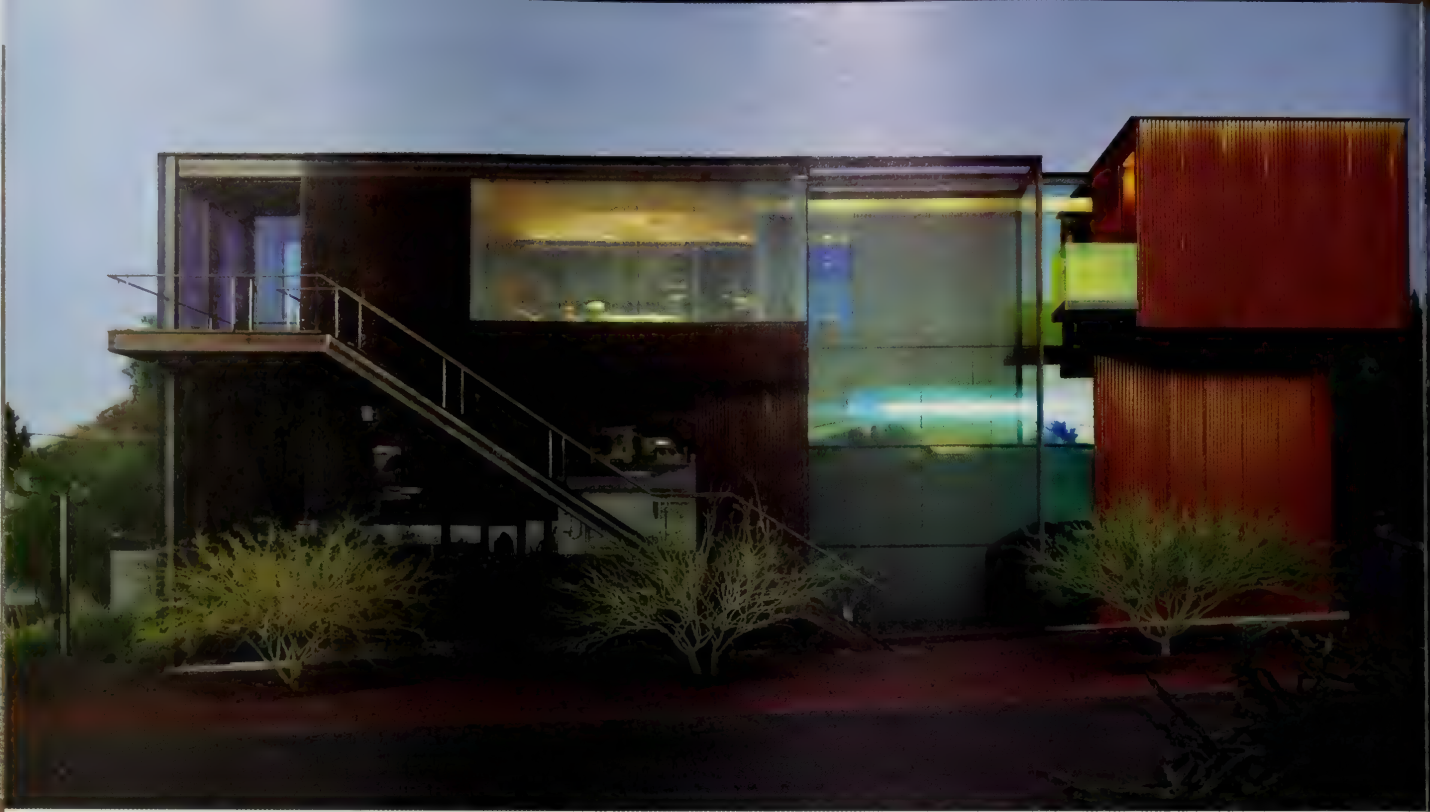
y Suzanne Stephens

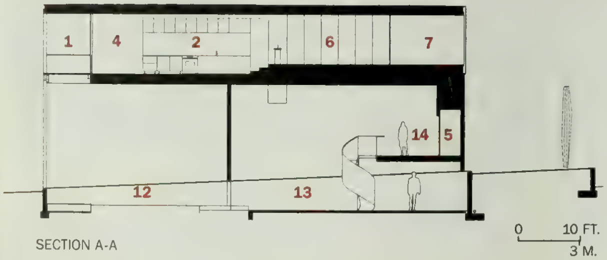
I wanted to wrap one material around the entire house—as sort of an architectural lingerie," explains Matthew Trzebiatowski, AIA, about the rusted wire mesh and corrugated steel swathing the exterior of his Xeros Residence in Phoenix, Arizona. In designing -under the name Blank Studio—the one-bedroom, 2,200-square-foot me for his wife, Lisa, and himself, Trzebiatowski, an architect in the fice of Wendell Burnette (page 92), seized on a lacy, if gritty, mesh to close open sitting areas and screen the glazed walls. Elsewhere along the terior, sturdy corrugated-steel panels, oxidized to a ruddy hue, gird the ructure. "The impulse was primarily aesthetic," Trzebiatowski says, not- g, however, that the wire mesh both cuts the sun's glare and affords ivacy, while the corrugated steel—with insulation—affords warmth hen temperatures drop. Trzebiatowski also used steel for the structural ame. He considers a totally steel house a "kind of holistic notion that orks well with the parched and rocky landscape. Most of my decisions e about being in this place," he says. Because of the desert climate, he med the house Xeros, the Greek word for dry. (Fortunately, the lack of oisture here has kept the rusting process from going too far.)

The neighborhood where the Trzebiatowskis found a rectangular, -acre corner lot (recently expanded to ¼ acre) lies on Phoenix's outskirts, here the city's flat, gridded streets come to a screeching halt at the foothills of the North Phoenix Mountain Preserve. The existing, unprepossessing, shoe-box-shaped house had to go: Like many in this catchment of undistinguished, one-story ranches and bungalows, it dated to the 1950s and needed extensive renovation. With musicians, architects, and artists moving into this precinct, it is not surprising that these newer, more bohemian neighbors didn't complain to the local design review board that the 30-foot-high, rusty-steel house would, without exceeding the zoning height limit, loom up over this enclave's stuccoed walls and tiled roofs.

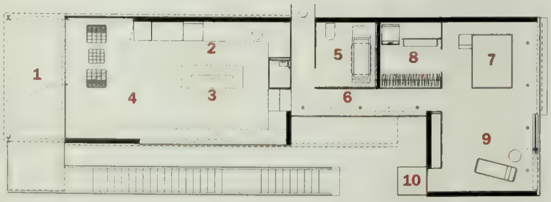
From various angles, the Xeros Residence looks like a treehouse or a huge periscope—or both, combined. Within a narrow site, measuring only 50 by 250 feet, Trzebiatowski could not spread out horizontally, nor did he and his wife relish looking directly into the next-door neighbors' houses or yards. So on the upper level, he oriented the 30-by-16-foot living/dining/kitchen area to the south, toward the valley where the rest of

Project: *Xeros Residence, Phoenix*
Architect: *Blank Studio—Matthew G. Trzebiatowski, AIA, principal*
Owner: *Matthew and Lisa Trzebiatowski*
Engineers: *Brickey Design Associates (structural); Kunka Engineering (mechanical and plumbing), Tony Woo Engineering (electrical)*
Consultants: *Debra Burnette Landscape Design (landscape)*

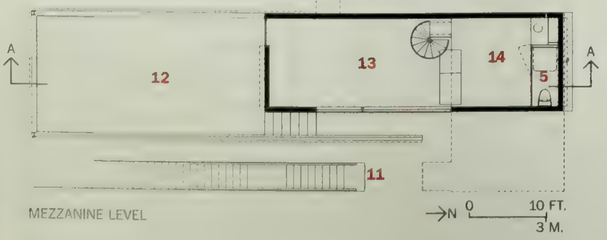




SECTION A-A



UPPER FLOOR



MEZZANINE LEVEL

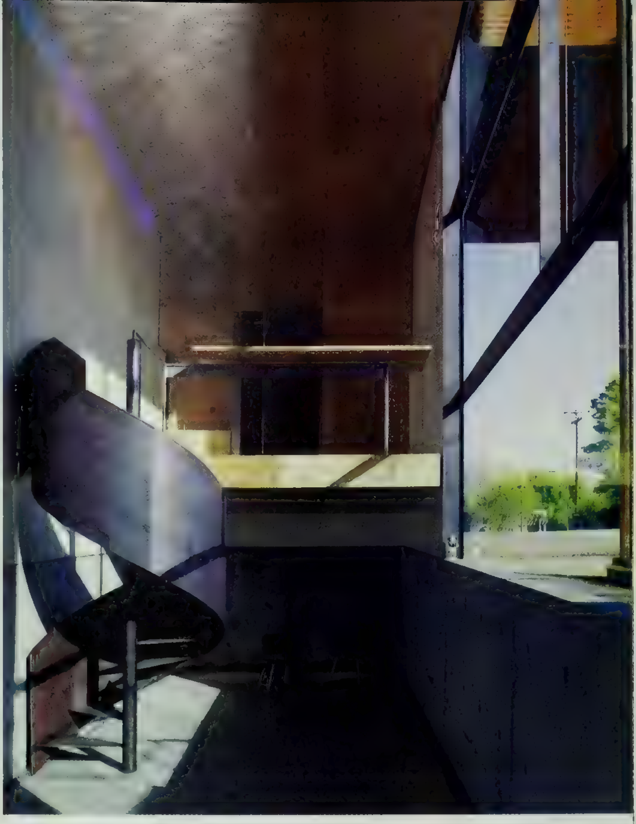
On the east facade, behind Palo Brea trees, an exterior steel stair leads up to the main living quarters. Another run continues down to the studio and open patio, nestled slightly below grade. A yellow, laminated-glass balcony projects from the sleeping wing (right).

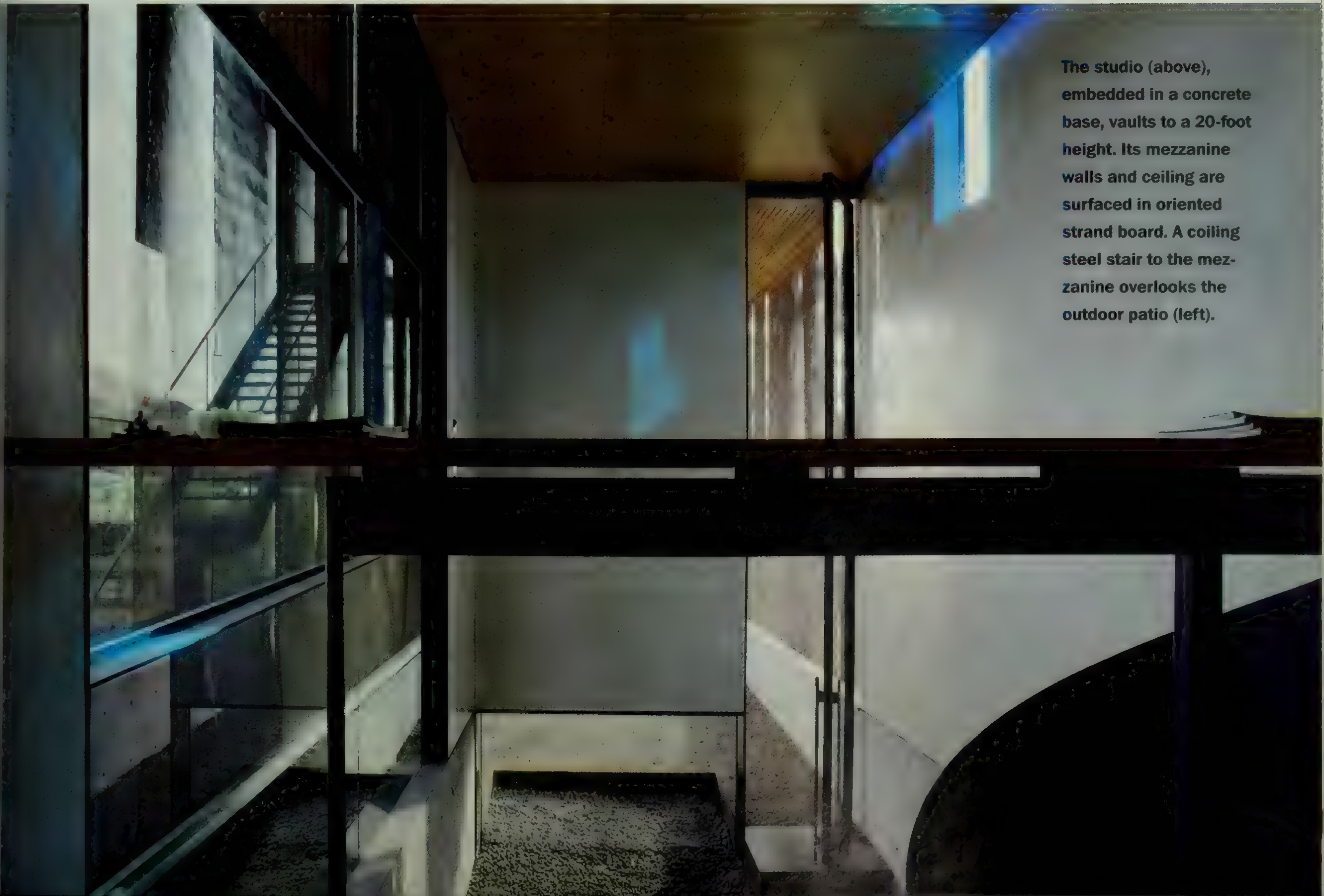
1. *Entry terrace*
2. *Kitchen*
3. *Dining*
4. *Sitting/living*
5. *Bathroom*
6. *Gallery*
7. *Sleeping*
8. *Storage closet*
9. *Media center*
10. *Balcony*
11. *Access to residence*
12. *Exterior courtyard*
13. *Studio*
14. *Library*

enix sprawls, and the bedroom to the north, facing the unpopulated untains. The 24-foot-long bedroom wing cantilevers 12 feet to the east m the house's 12-foot-wide base to include a home media center. The e, containing a library and studio, is partially enclosed by sloping con- te foundation walls, and depressed slightly below grade along the hill's egree incline. To the south, the studio opens onto an enclosed outdoor io and, beyond that, a 14-inch-deep pool.

With so much of the house in steel, the construction job sounds sonably quick and easy. Nevertheless, five steel contractors were olved in executing everything from handrails for the open-riser entry r, which snakes up the east exterior facade, to the structural frame. ne of the crew built four steel moment frames on-site, on the ground, n tilted them up and installed them in the poured-concrete founda- ns. Some workers filled out the structure with steel members, while ers enclosed the perimeter walls with steel studs and 20-gauge corru- ed-steel sheets. After that, they hung 4-foot-wide strips of woven wire sh, used typically for sifting rocks on quarry conveyor belts, to shade various glazed and open portions of the east, south, and west facades. a final touch, they tied the strips together with wire. Within six nths, the silvery raw steel had oxidized to the color of the earth.

But the house isn't all steel: The mezzanine, first floor, and roof composed of a prefab TJI (wood-and-steel truss joist) system, and m-chocolate-colored Latvian plywood surfaces the floor, cabinets, nters, and benches of the upper living quarters. Trzebiatowski athed the walls upstairs and downstairs in gypsum board, which he n plastered, and finally waxed for a smooth, luminescent white sheen.





The studio (above), embedded in a concrete base, vaults to a 20-foot height. Its mezzanine walls and ceiling are surfaced in oriented strand board. A coiling steel stair to the mezzanine overlooks the outdoor patio (left).

Latvian plywood surfaces the floor and walls in the sleeping and cooking quarters (top and above), as well as the kitchen benches. In the bedroom, a glass wall appears to slip past the floor deck and ceiling plane, while a light trough illuminates the end wall, made of gypsum board troweled with wax and plaster.

Flashes of color intermittently spark the rusty exterior, as in the brigh yellow, laminated-glass balcony projecting from the master suite, or th blue, laminated-glass antechamber for the bathroom sink, which pops ou of the west facade.

The interior's juxtapositions of lustrously brittle, white wall and the silky smooth, dark plywood planes bring to mind Mies van de Rohe's predilection for luxurious woods and marbles in his houses although Trzebiatowski follows a more economic route. But if Mies' spirit seems to hover over certain finishes, or the prim lightness of a rectilinear plan, Le Corbusier lurks in some of the volumetric spatial effects For example, the narrow, 20-foot-high studio, with a mezzanine at it north end, recalls the proportions of his Esprit Nouveau pavilion for th 1925 Exposition des Arts Décoratifs in Paris. A coiled stair to the studi mezzanine also belongs to Le Corbusier's signature *batterie de cuisine* albeit rendered in steel rather than concrete.

Trzebiatowski is not alone in his penchant for rusting stee Sometimes it seems the Sun Belt is gradually turning into an architectura "Rust Belt," as more and more young architects from Texas to Californi become enamored of the material's weathered tones and rough surfaces But as Xeros Residence demonstrates, oxidized steel can not only elegantl and acerbically wrap a lean, rectilinear structure, but, through its rust tinge on diaphanous and corrugated textures, it can also bring a fres dimension to classic Modernist principles. ■

Sources

Lighting: *Lithonia (fluorescent in colored gel sleeves); Deltalight, Erco (downlights); Nightscaping (exterior)*

Plumbing fixtures: *Duravit (tub, toilet); Kohler (bathroom sink, shower)*

Appliances: *True (refrigerator); Jen-Aire (dishwasher, stove/oven)*

For more information on this project go to Projects at **www.archrecord.com**.

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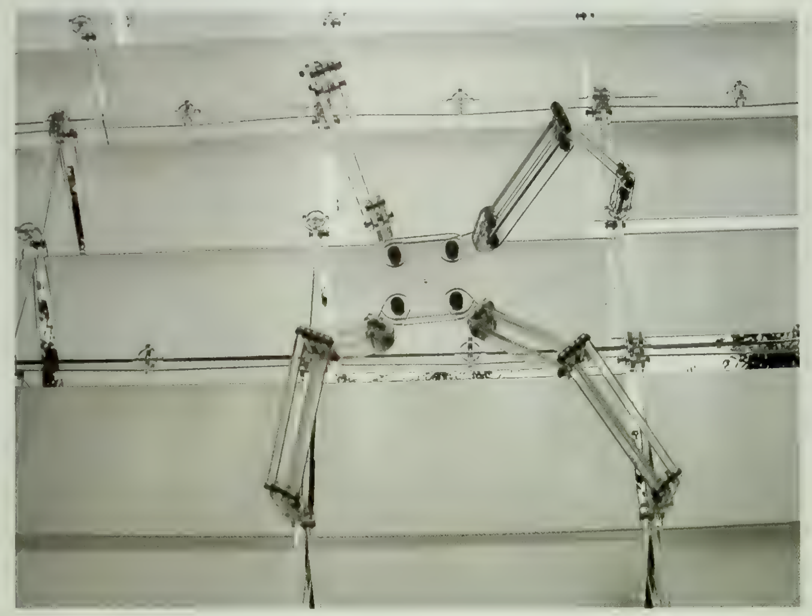
Robo Buildings: Pursuing the Interactive Envelope

N RECENT PROJECTS, SMARTER BUILDING SKINS AUTOMATICALLY CONTROL DAYLIGHTING, ENTILATION, AND MORE TO BENEFIT OCCUPANTS AND ENHANCE SUSTAINABLE DESIGN QUALITY

C.C. Sullivan



"Edge monkeys" are robots that would close windows, check thermostats, adjust blinds, and "gesture meaningfully to internal occupants" when they are clearly wasting energy.

In an article published in the cyber journal *Technoetic Arts* last year, British architect-academics Stephen A. Gage and Will Thorne describe a hypothetical fleet of small robots they call "edge monkeys." Their function ould be to patrol building facades, regulating energy usage d indoor conditions. Basic duties include closing unatnded windows, checking thermostats, and adjusting inds. But the machines would also "gesture meaningfully internal occupants" when building users "are clearly wastg energy," and they are described as "intrinsically delightful d funny." The authors liken the relationship between edge onkey and human to that of P.G. Wodehouse's Jeeves and ooster characters. "Jeeves's aim is always to modify ooster's behavior so that it is more sensible," they write. nd we need all the persuasion we can get to modify our havior before the planet is severely compromised."

Practicalities of microrobotics aside, this sci-fi-unding scheme crystallizes the widespread concern forming many recent architectural projects. Increasingly, chitects would like to automate their building envelopes ther than leave energy-efficient operation to chance (or harried mainnance engineers). As a result, the critical interface between the interior d the elements is getting more attention—and more animated.

Thanks largely to innovators from Europe, buildings are wearing more smarts and moving parts. The lion's share use double-skin construction as well, in which inner and outer glass walls are separated by a ventilated cavity that often contains solar shading. Hundreds of double-glass or interactive envelopes appeared in Germany and Austria in the 1990s. In the United States, such projects are novelties, despite the existence here of an early example that debuted during the early 1980s oil crisis: Cannon's Occidental Chemical Center in Buffalo, New York, introduced a double-wall facade containing automated operable louvers.

Back then, the idea was an anomaly. Today, activating the skin is in vogue, note critics and proponents alike. From the "robotecture" labs at top architecture schools to interactive art installations like James Carpenter's *Podium Light Wall* for New York's 7 World Trade Center, aesthetics and technology are converging in unlikely places. Nonetheless, the mainstream drivers for interactive envelopes are sustainability and stringent energy codes. Another is heightened interest in "Wooster"—the end user. "The costs can't be justified strictly on the basis of energy savings," points out Eleanor S. Lee, a scientist and architect in the Building Technologies Program at Lawrence Berkeley National Laboratory (LBNL), Berkeley, California. "But these systems will be used increasingly for occupant satisfaction, including thermal comfort, acoustical performance, and access to fresh air."

While fashionable and possibly advantageous, the adoption of high-tech envelopes has been slow. Skeptical architects worry that operable components are magnets for value-engineering. Or they foresee them being unplugged and later stripped off their buildings due to poor

C. Sullivan is a consultant and author who specializes in architecture and hnology. He is currently writing a book on interactive building envelopes.

CONTINUING EDUCATION

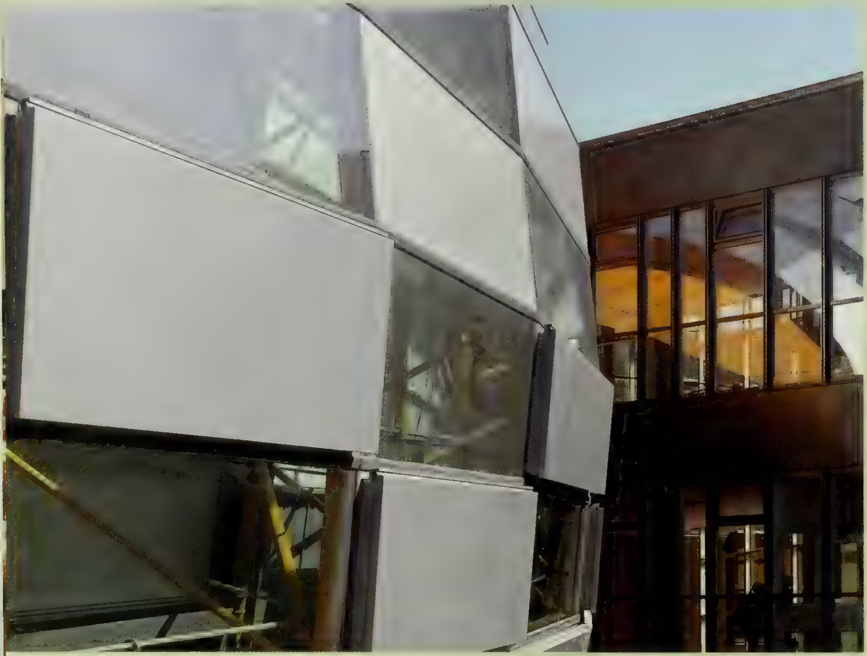
Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 156 and follow the instructions. Another opportunity to receive Continuing Education credits in this issue can be found in the sponsored section beginning on page 163.

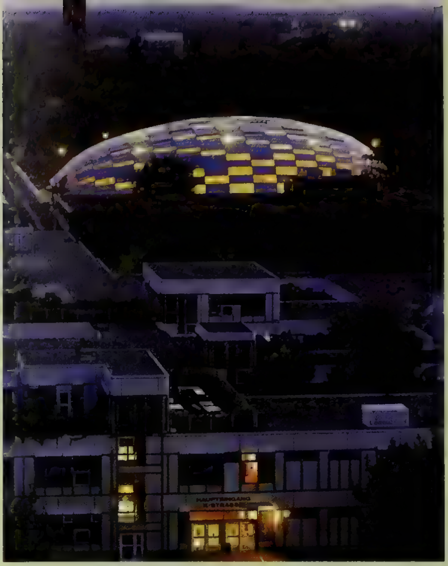
LEARNING OBJECTIVES

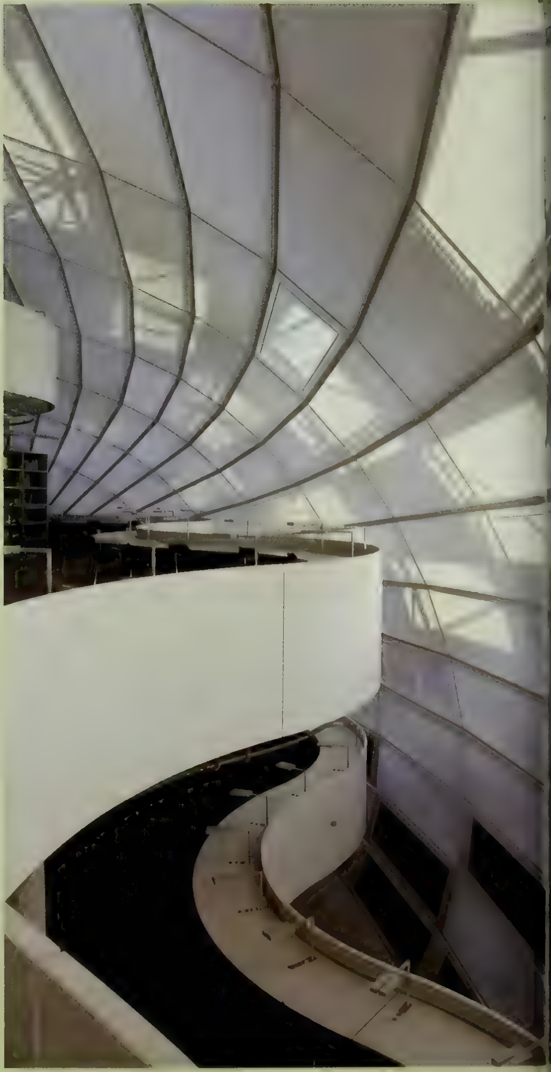
After reading this article, you should be able to:

1. *Describe interactive building envelopes.*
2. *Explain the current interest in active building skins.*
3. *Identify the application most responsible for interactive building support.*

r this story and more continuing education, as well as links to sources, ite papers, and products, go to **www.archrecord.com**.

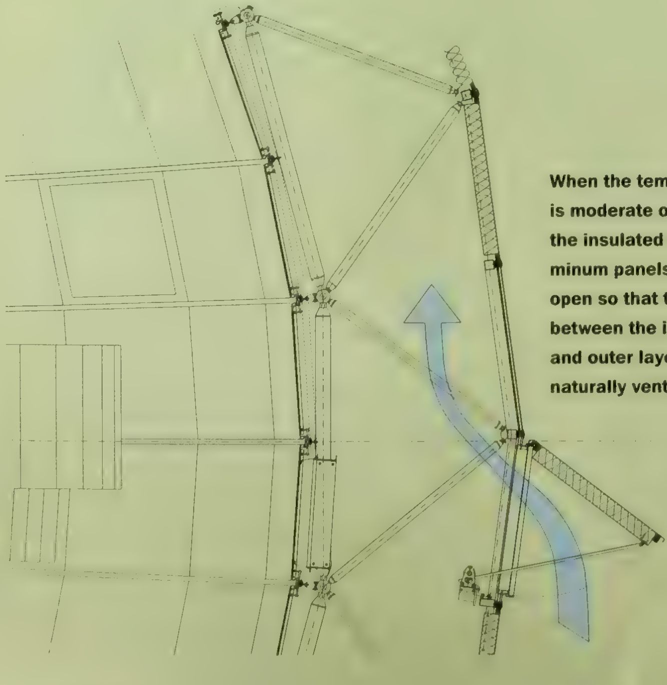






Free University Berlin

This building has an outer layer of windows and aluminum panels, and an inner layer of fiberglass fabric. In winter, warm air between the layers rises to the top, then is drawn down through the building to provide heat.



When the temperature is moderate outside, the insulated aluminum panels swing open so that the space between the inner and outer layers is naturally ventilated.

SECTION DETAIL

erformance or deficient maintenance. Other firms cite client interests, oting such high-profile failures as the broken actuators on the sun-ontrol diaphragms cladding Jean Nouvel's 1988 Institute du Monde rabe in Paris. “Culturally, we have little confidence in what we're doing, d in systems integration for these hybrids,” says Volker Hartkopf, direc-r of the Center for Building Performance and Diagnostics at Carnegie lellon University, Pittsburgh. “Yes, these things can break, but so can fans, mpers, thermostats, and so many other things we take for granted.”

“I think such worries are well-founded,” counters Bruce ichols, a principal of the New York City–based facade consultancy ont Inc. “While an automobile maker is a single source of responsibility, at doesn't happen in architecture.” He recounts his work with the panese firm SANAA on a competition-winning office building for the ovartis campus in Basel, Switzerland. For its transparent triple glazing ith integral automated ventilation and Venetian blinds, the shades me with only five-year warranties; the glass was guaranteed for at least years. So, if a shade fails after five years, Novartis would have to pay r replacing a glass unit just to access the defective shade. “We asked the anufacturers if they could get their act together to offer a collective arranty,” Nichols recalls. “They couldn't.”

Beyond famous failures, high installed costs, and mismatched arranties lay big coordination challenges, adds Nichols, and conflicting bilities among project team members. Plainly, the road to the inter- tive envelope is a rough one. But at the end of the ride, optimal energy rformance is the payoff, right? So it is hoped. Yet Lee warns there is ockingly little postoccupancy data to confirm initial design claims on der projects.

WO THIRDS OF COMMERCIAL BUILDING OOLING LOADS COME FROM LIGHTING YSTEMS AND SUN-LOADED GLASS SURFACES.

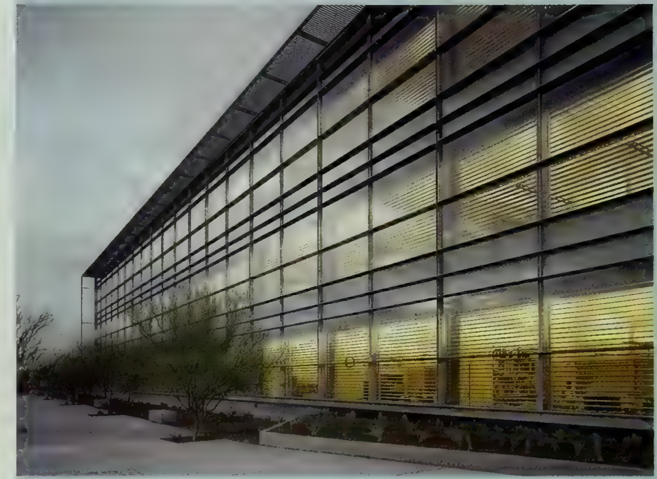
un-tracking systems lead the way

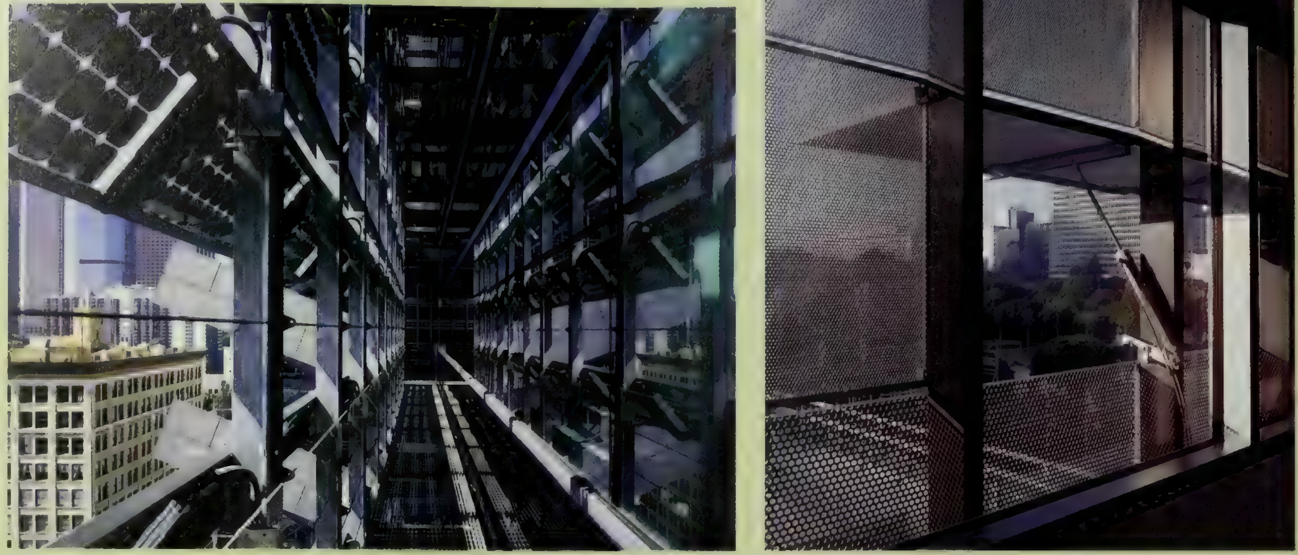
hile animated as much by polemics as by actuators, new interactive velopes still have fervent supporters. A single, conventional application ts most of the credit for the good buzz: daylighting control. On its own, operable shade or louver is easy for an architect to analyze, especially ith new daylight analysis tools built into common CAD platforms. The erarching driver for most automated shading is the typical energy ofile of large commercial buildings, according to LBNL. Cooling loads minate, with more than two thirds needed simply to counteract heat in from lighting systems and sun-loaded glass surfaces.

Also encouraging the use of interactive envelopes is the solid rformance of photosensors, dimmable lighting controls, and novel lar-tracking devices. More recent advances include switchable glazings, metimes called “smart windows.” These automatically tint or frost, tivated by either an applied voltage (electrochromic) or a small release gas, such as hydrogen (gasochromic). The former type is more widely ailable, but both can reduce combined cooling and lighting loads by up 5 watts per square foot in interior perimeters.

Another appeal of automated shading relates to the feasibility of e highly transparent, relatively unarticulated building enclosures cur-ntly in fashion. For Arizona State University's Biodesign Institute in mpe, collaborators at Gould Evans and Lord Aeck Sargent Architecture mpensated for a large easterly expanse of window walls by using inte-or aluminum louvers controlled continuously by photocells and n-tracking software. A manual override accessible through occupants' mputers allows personal adjustments to be made.

Biodesign Institute, Arizona State University, Tempe A large, easterly expanse of windows uses aluminum louvers that are controlled continuously by photocells and sun-tracking software. The design allows occupants to control most of the louvers in their offices using their PCs, although at above 8 feet from floor level the louvers are controlled automatically.





Caltrans District 7 Headquarters, Los Angeles
Different elevations of the building have different systems. On the south side (above), large photovoltaic panels form a brise-soleil. On the east and west facades, perforated solar-shading screens hang a foot from the exterior wall. When they heat, air around them rises, which draws cooler air from ground level. Each day, about 1,000 screens (above right), which are located in front of windows, open and close.

Is intelligent shading worth the bother? LBNL tests suggest so. Automated daylight setups coupled with dimmable and switchable electrical lighting beat conventional fixed blinds in terms of energy draw by about a third in winter and up to 52 percent in summer. Measured daylighting levels are comparable to those for unshaded bronze glazing, with only half the solar heat gain. Lee adds that the systems allow building managers to voluntarily curtail electrical loads as part of utility demand-response programs, which help avert blackouts.

Active doubles, anyone?

Harder to predict are the benefits of hybrid envelope systems, in which two or more interactive strategies are combined. Many European architects have integrated ventilation, shading, and other active technologies into double-wall facades that serve as primary space conditioners. Unlike Cannon's Occidental Chemical building, early double envelopes had few moving parts. (Some Europeans use the term "active facade" to describe any ventilated double wall, regardless of operability.) More recent projects feature more "edge monkeys": automated hoppers, vents, and shades.

An extreme example is the philology library by Foster and Partners at Berlin's Free University, completed last year. The four-story, orblike enclosure—with an underfloor air plenum—is engineered for free cooling for about seven months of the year using natural ventilation. A checkerboard cladding of aluminum and glazed panels protects a inner glass-fiber membrane. Operable panels close during cold weathe and fresh air is drawn from outside through the floor cavity and into th envelope void. A concrete internal structure provides thermal mass an radiant cooling and heating of recirculated air. The client expects abou 35 percent energy savings over a comparable facility.

Hopefully, performance data will bear this out. But unlik Foster's 1997 energy-miser Commerzbank Tower in Frankfurt, mos large-scale projects don't document utility costs. Karl Gertis, a buildin physics researcher at the University of Stuttgart, thinks it's because the often miss the target. In the design phase, simulations prove notoriousl unpredictable, he believes. Once built, natural ventilation often isn adequate for room air handling or for maintaining comfortable temper atures. Weak convective airflows in wall cavities may preclude the use o insect screens and air filters, too. Last, Gertis cites numerous building designed without mechanical cooling that have failed. Foster's librar stands prepared: On hot days, it leeches supplemental cooling from a adjacent structure.

For Plantation Place, a large office development in London Arup Associates incorporated active solar shading and occupant controlled operable ventilation in its double-skinned cladding design. A their lower levels, the buildings have a heavy curtain of limestone fins i deference to the masonry expression of the project's Neoclassical neigh

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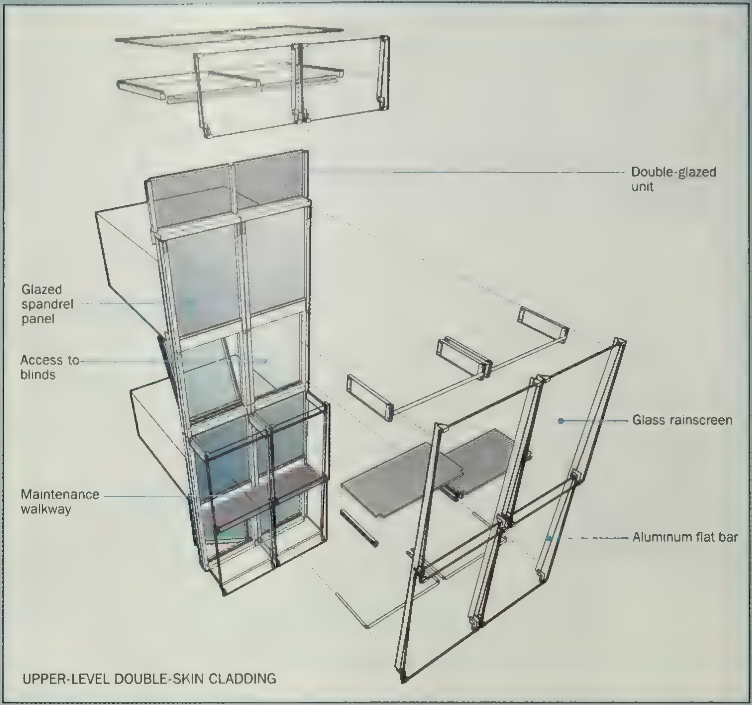

Aurora Place, London

At the upper levels of the building, the outer layer of double-skinned facade is made up of frameless glass panels, angled at 3 degrees, with open joints. Behind the screen is a walkway used for maintenance. Tenants can open the windows to provide natural cooling. The window blinds are automatically raised or lowered based on current conditions in each tenant zone. The blinds are accessible from the outside for cleaning and maintenance.

bors. Upper levels, on the other hand, are all glass, yet those floors can be cooled with only natural ventilation during much of the year. The outer layer of the 2-foot-deep double walls comprises a rain-and-wind screen of shingled, frameless glass panels, angled at 3 degrees, with open joints. Behind it is a maintenance walkway and solar blinds adjacent to an inner window wall with operable panels. The two layers were delivered to the job site as 5-foot modules and prefabricated on-site into units with integral blinds and catwalks.

To ensure that occupants enjoyed the benefits of the complex facades, Arup Associates and facade engineers from Arup planned an unusual daylighting scheme. In each tenant zone, photosensors were mounted on inner facades to automatically control the raising and lowering of blinds based on local conditions. "There are reliability questions for automated daylighting control," admits Arup facade engineer Neil McClelland. "Any design should recognize that there will be issues and allow for access to the blinds for cleaning and maintenance." McClelland adds that the main reason to use automated blind controls is for maximum transparency, not energy-efficiency.

Stick-built robotics

For many architects, the European tradition of customizing an off-the-shelf, unitized, double-wall product presents a safe and effective entrée into the world of interactive facades. Less prevalent is the craft-based approach used by Thom Mayne for Caltrans District 7 Headquarters i Los Angeles, which opened in late 2004. There, Morphosis Architect pulled apart the envelope's functional elements, "redelegated" them, an coordinated their job-site "reassembly" among seven exterior subcon tractors, says project leader Pavel Getov.

The result combines a large photovoltaic array and independ ently controlled, automated elements within a multiple-layer facade. Th prominent shading layer of perforated metallic panels on east and wes facades cuts initial solar heat gain by about 15 percent. The screen hang about 1 foot from the slab edges of a weather-wall of metal framing gypsum sheathing, and PVC membrane. In this way, the intervenin space functions partly as convective cavity. One thousand or so of th scrim panels, corresponding to ribbon windows behind, open or clos daily. Those on the east close in the morning, those on the west in th afternoon. For longevity, the architects specified stainless-steel hardwar and a single pneumatic lift per panel, rather than the pair of electrica actuators originally considered. A rooftop sensor signals the panels t close during high winds.

According to Getov, 3D modeling and mock-up testin ensured the performance of the stick-built envelope under wind, rai and seismic conditions. The firm shared a single building-informatio model among consultants and manufacturers, and component proto types made on a 3D printer. Still, says Getov, "A lot of the design i

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resolved through the mock-ups." Even with extensive reviews and site visits for the customized, kinetic countenance, the project penciled out at $165 per square foot, including finished interiors and design fees—about the same as an average office building. The building's small facade area in relation to its floor plate accounts in part for the cost-effectiveness. Energy savings are projected at about 40 percent. Getov's advice for architects interested in the process seems counterintuitive. "The small manufacturers can be the most helpful because they don't already have a set solution in place," affording architects more conceptual control and collaboration, he explains. "It allows you to break down the process."

Omniscient control, or edge monkeys?

Beyond two ways to build a wall, the Morphosis projects also suggest two ways to make walls smart: independent control or centralized control. A project at Cooper Union in New York will integrate all facade operations into the building automation system (BAS), whereas Caltrans has independent (although Internet-accessible) envelope controls and a common override function only for emergencies, such as high winds.

Recent thinking on active envelopes mirrors that for m/e/p design generally: avoid complexity and, therefore, very integrated schemes. Some projects, such as Arup's Plantation Place , have explored highly localized automation. There, sensors mounted on the inner facade detect solar conditions for each tenant zone. Solar blinds in specified areas raise or lower autonomously, depending on the local temperature, su strike, and occupant preferences. Natural ventilation rates are determine locally as well. Like the robotic edge monkeys, however, such island of control need occasional global guidance—and the will to ignore th people they serve. "You can't rely on human input," says Arfon Davies, a associate with Arup Lighting in London. "And if automatic shading con trols are independent from the BAS, they should still be able to send signal to the BAS to indicate a fault."

Davies adds that even the most automated systems should hav a local override. More important, says LBNL's Lee, "Windows are ver much a personal item, and having that control taken away from you ca be a pain. You have to have manual override." Taking a related tack, Goul Evans chose to split the control of interior blinds for Biodesign Institut Above 8 feet from each floor, the shading is fully automated based o solar position; below that, occupants choose. "These systems begin t have a determinist impact on the psychology of the user," says Goul Evans principal Jay Silverberg. Is any optimism warranted for a new wa of smart buildings? "Architectural environments will be increasing smart and responsive and capable of complex behaviors," predic Michael Fox, the Venice, California–based architect and robotics exper "Designing interactive architectural systems is not inventing, but appre ciating and marshaling the technology that exists and extrapolating it t suit an architectural vision."

Edge monkeys, indeed. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "Robo Buildings: Pursuing the Interactive Envelope" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers (page 204).**
- **Fill out and submit the AIA/CES education reporting form (page 204) or download the form at www.archrecord.com to receive one AIA learning unit.**

QUESTIONS

1. Where did double-glass or interactive-envelope buildings first appear in the early 1980s?
a. Germany
b. Austria
c. England
d. New York

2. The driving forces for interactive envelopes are all except which?
a. occupant satisfaction
b. sustainability
c. value engineering
d. stringent energy codes

3. The conventional application responsible for the fervent support of interactive envelopes by designers is which?
a. fresh-air ventilation
b. daylighting control
c. thermal-mass cooling
d. radiant cooling

4. Adoption of high-tech envelopes has been slow because architects worry about which?
a. operable components being stripped off buildings
b. stringent energy codes
c. sustainability
d. the novelty of the idea

5. The drawbacks to using interactive envelopes include all except which?
a. high installed costs
b. mismatched warranties
c. occupant satisfaction
d. famous failures

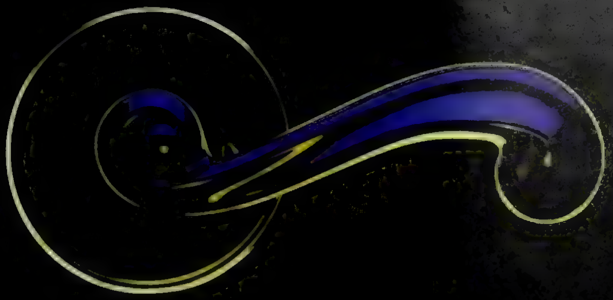
6. The typical energy profile of large commercial buildings shows what amount of the cooling load is needed to counteract the heat gain from lighting and sun?
a. one fourth
b. one third
c. one half
d. two thirds

7. Smart windows consist of which?
a. photosensors
b. dimmable lighting controls
c. switchable glazings
d. solar-tracking devices

8. The energy draw of conventional fixed blinds is beat by up to 52 percent in summer by which?
a. automated daylight setups
b. dimmable electric lighting
c. switchable electric lighting
d. a combination of all three

9. The European use of the term "active facade" describes which?
a. primary space conditioners
b. any ventilated double wall
c. edge monkeys
d. hoppers, vents, and shades

10. According to Morphosis's Pavel Getov, small manufacturers can be the most helpful to architects contemplating the robotics process for which reason?
a. they will cost less
b. they have more experience
c. they do not have a set method in place
d. they will exert more control



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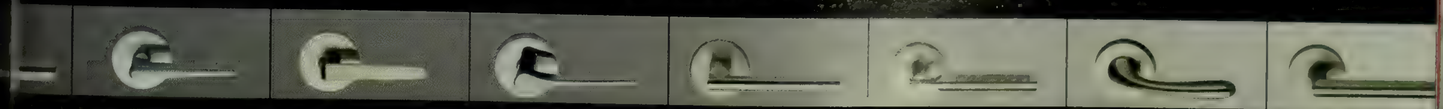

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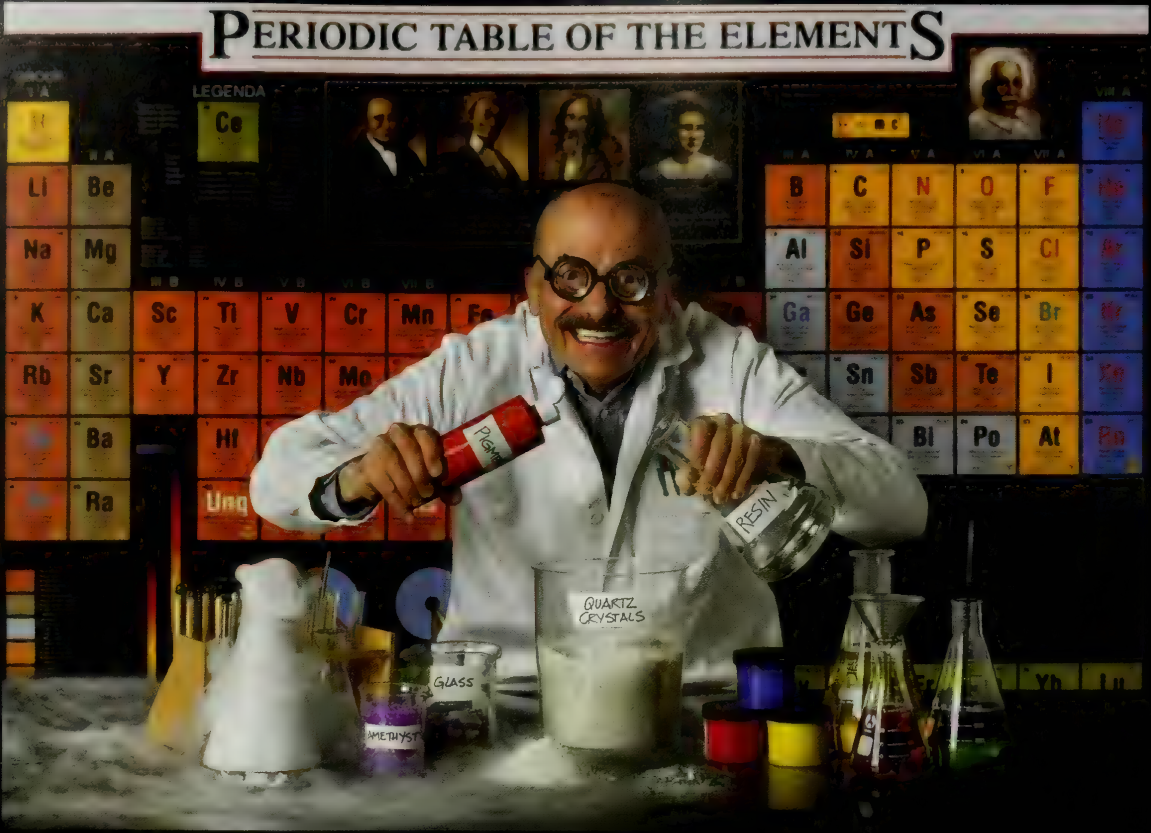

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Spring 2006

New Fire Resistance Design Manual

The Gypsum Association's technical and building code committees are nearing completion of their work on the 18th edition of the Association's flagship publication, GA-600, Fire Resistance Design Manual. The new edition is scheduled for release in June, at which time it can be obtained through the Association's website at www.gypsum.org.

GA-600 is referenced in several building codes and is a "must have" reference document for architects and specifiers. The new manual also provides users with the latest compilation of tested gypsum board fire-rated and sound control systems that are permitted for use by model building codes.

The 158-page 18th edition of GA-600 contains 41 new designs, including several double steel-stud wall designs, and an expanded section on roof-ceiling systems.

The revision process for each new edition of GA-600 incorporates a thorough review of the explanatory information that accompanies the tested systems. The reference information for the 18th edition has been completely reviewed by the Association's technical committees and staff and has been updated to incorporate the most current information relating to fire and sound tested gypsum board systems.

Watch for an order form for the 18th edition of GA-600, Fire Resistance Design Manual in the next issue of Gypsum Nexus or check the Association website at www.gypsum.org regularly for an announcement publicizing its release.

GYPSUM ASSOCIATION

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ASTM Publishes Standard Classification for Abuse-Resistant Gypsum Panel Products

ASTM INTERNATIONAL
Standards Worldwide

ASTM International recently published *C 1629/C 1629 Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels.*

Although abuse-resistant gypsum panel products have been available for a number of years, there have been no standardized methods for comparing the abuse resistance properties of different panel products. This new standard now provides producers and specifiers with a means to compare the relative abuse resistance of interior gypsum panel products and fiber-reinforced cement panels using four test methods.

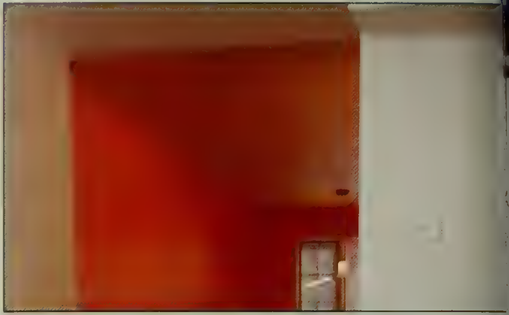
Three existing test methods *(ASTM D 4977 Test Method For Granule Adhesion to Mineral Surfaced Roofing by Abrasion; ASTM D 5420 Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight; and ASTM E 695 Test Method of Measuring Relative Resistance of Wall, Floor and Roof Construction to Impact Loading)* have been modified from their originally intended uses for the testing of abuse-resistant panels per the instructions in the standard. In addition, a new test method, the *Hard Body Impact Test*, has been developed specifically for the standard. Any combination of the four tests may be used to collect the data necessary to compare wall panel products for abuse resistance.

Four tables are provided in the standard to determine the abuse resistance classifications of panel products. Each table references a specific test method and provides three ranges or classification levels of abuse resistance: level 1 is the lowest classification for a specific property and level 3 is the highest classification.

The standard's annex contains complete instructions for conducting a hard body impact test, including instructions for assembling the test apparatus and formulae for calculating the impact energy created by the testing apparatus.

Copies of the standard may be purchased from ASTM International, 100 Bar Harbor Drive,
PO Box C700, West Conshohocken, PA 19428-2959. Phone: (610) 832-9585 Fax: (610) 832-9555
Website: www.astm.org

Wallboard Shipments Set New Record In 2005



The United States gypsum board industry achieved its highest rate of annual shipments ever in calendar year 2005 when the U.S. manufacturers of gypsum board (also known as wallboard or drywall) shipped a total of 36.16 billion square feet of material. This volume represents a substantial increase in shipments over the same 12-month period of 2004 when 34.25 billion square feet of board were shipped. The 2005 figure represents the fifth consecutive year of increased shipments for the U.S. gypsum board manufacturing industry.

Shipments from Canadian manufacturers also rose for the fifth consecutive year as production increased from 3.55 billion square feet in 2004 to 3.58 square feet in 2005.

Additional data on gypsum board shipments can be obtained by accessing the organization's website at www.gypsum.org.

MSHA, Gypsum Association Officials Sign Alliance Agreement

The U.S. Department of Labor's Mine Safety and Health Administration (MSHA) recently announced the signing of an alliance agreement between it and the Gypsum Association to foster safe and healthful aggregate operations nationwide. The top leaders from the two groups, David G. Dye and Michael A. Gardner, signed the agreement at the Gypsum Association's fall meeting in The Woodlands, Texas.

MSHA
Ensuring
Worker Safety and Health
in the Nation's Mines

"We will use our collective expertise to help foster a culture of prevention by sharing best practices and technical knowledge," said Dye, acting assistant secretary of labor for mine safety and health. "We have agreed to advance safe and healthful working conditions for workers by providing technical assistance, education and training, sharing information and promoting the national dialogue on mine safety and health."

The Gypsum Association is a nonprofit organization in Washington, D.C., that represents 10 manufacturers of gypsum board in the U.S. and Canada and provides technical information and assistance to the construction industry. Gypsum ore is a mineral found in sedimentary rock formations. Gypsum rock is mined or quarried and then crushed. The crushed rock is then ground into a fine powder and used as a base for gypsum plaster, gypsum board, and other gypsum products.

"Our industry has worked diligently to amass an excellent historical safety record for both in-plant operations and mining and quarrying facilities," said Gardner, executive director/chief executive officer, Gypsum Association. "As technology changes, however, our industry will face new safety challenges. Our new partnership with MSHA will allow our association members to learn about new and different safety methods, and it will provide us with opportunities to exchange safety information with MSHA in an open and educational forum."

Under the agreement, MSHA and the Gypsum Association will work together to achieve the following technical assistance and education and training goals:

- conduct evaluations of certain applied engineering topics to improve mine safety and health in gypsum mines and facilities;
- administer analyses to identify hazards affecting the health and safety of the alliance's miners;
- analyze historical data to evaluate the effectiveness of compliance and safety;
- perform mine safety and health case studies to determine areas for improved safety;
- use evaluations and case studies to set objectives and performance-based goals; and
- develop training and education programs to reduce and prevent mine hazards.

Both organizations will work to raise awareness about mine safety and health by expanding outreach efforts and communication through print and electronic media and industry conferences.

MSHA's primary mission as a federal agency is to ensure worker safety and health in the nation's mines. More information on the alliance can be viewed on the Internet at www.msha.gov.

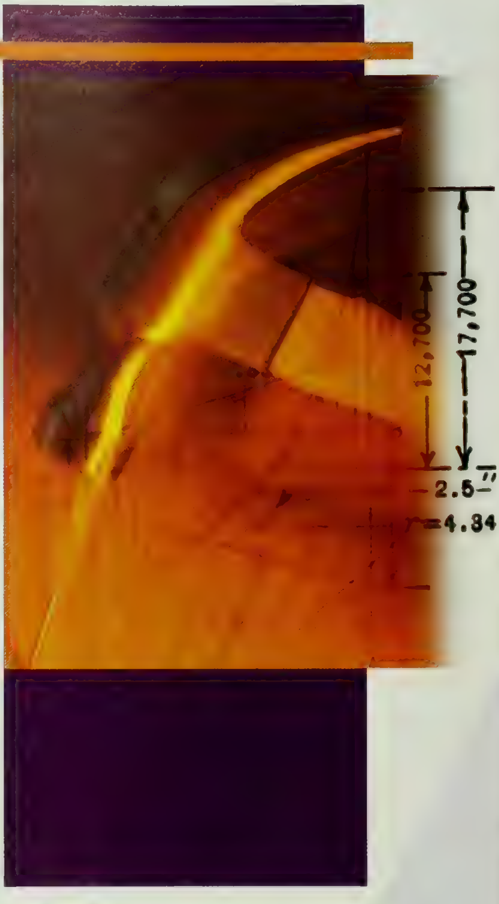
Gypsum Board System Joint Tolerances

Gypsum board systems can either be non-rated or rated for fire, sound, or shear resistance. The joint tolerances in gypsum board systems rated for fire, sound, or shear resistance need to be tighter than the joint tolerances in non-rated systems. In sum, higher levels of expected performance require higher levels of precision in construction.

For many years the construction standards for joints between adjacent panels of gypsum board have required the board edges to be in "moderate contact." This level of precision is fine for the needs of higher performance systems rated for fire, sound, or shear, but may be a bit tight for non-rated systems. Although good construction practices dictate that moderate contact should continue to be the goal in both rated and non-rated systems, it has long been recognized that tolerances are needed for gypsum board joints in non-rated systems in today's construction environment. Stud dimensions have tolerances, wall heights have tolerances, and even the gears inside a screw gun are manufactured to be within some "plus or minus" tolerance. Therefore, it stands to reason that gypsum board joints in non-rated systems also should have some specified maximum tolerance.

The Gypsum Association has developed the following recommendation for gypsum board joints in non-rated systems. Joints in non-rated systems are permitted to be up to 1/4 inch in width at the widest point and must be pre-filled with joint compound before being finished with tape and compound. Joints up to 1/8 inch wide can be filled with all-purpose or taping compound, either ready-mixed or setting type. Joints greater than 1/8 and up to 1/4 inch wide must be filled with setting type all-purpose or taping compound. The type of compound used to pre-fill gaps in the joints must be compatible with the compounds being used to tape and finish the wall or ceiling.

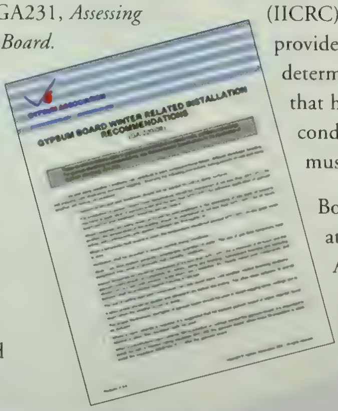
Joints between gypsum boards in systems rated for fire, sound or shear must be constructed with the gypsum board edges in moderate contact. Moderate contact means that the edges are essentially touching each other. It is possible for the gypsum board edges to be in moderate contact yet not touch along the entire length of the joint. Therefore, in gypsum board systems rated for fire, sound or shear, small gaps spaced sporadically along the joint are acceptable as long as the board edges are essentially touching one another.



Two Revised GA Technical Publications

The technical committee of the Gypsum Association has recently revised two technical publications: GA-220, *Gypsum Board Winter Related Job Problems* and GA231, *Assessing Water Damage to Gypsum Board.*

GA-220-06 has been reformatted to provide easier access to its most important information. This document provides instructions that enable successful gypsum board installations during the winter months and help avoid cold-weather-related installation problems.

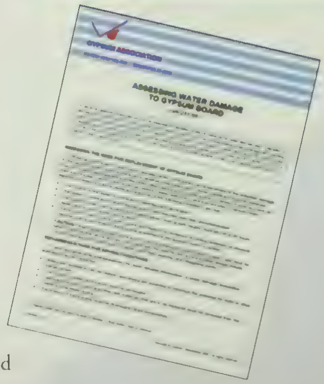


GYPSUM ASSOCIATION

GYPSUM BOARD WINTER RELATED INSTALLATION RECOMMENDATIONS

GA-231-06 includes new references to two standards from the Institute of Inspection, Cleaning and Restoration Certification (IICRC). This document provides useful information for determining whether gypsum board that has been subjected to wet conditions can be restored or if it must be replaced.

Both documents can be downloaded at no charge from the Gypsum Association's website at: www.gypsum.org



GYPSUM ASSOCIATION

ASSESSING WATER DAMAGE TO GYPSUM BOARD

ESSENTIALS from the Gypsum Association

GA-600-2003, *Fire Resistance Design Manual* (144pp)

The 17th edition of this premier publication includes fire resistance ratings for over 325 gypsum-protected wall, ceiling, roof, column, beam, girder, and truss systems. Added to the newest edition are 2-hour wood- or steel-frame floor/ceiling systems, wood I-joist floor/ceiling systems, 100% wood load-bearing partitions, proprietary pitched chord truss systems and 10 new steel column protection systems. This convenient and up-to-date manual allows the user to quickly and easily determine essential characteristics of a wide range of fire-resistive gypsum systems classified according to use and fire resistance. Includes STC and IIC ratings for numerous systems.

GA-600-2000, *Fire Resistance Design Manual* (131pp)

Includes fire-resistance ratings for over 300 gypsum-protected wall, ceiling, column, beam, girder, and truss systems, including many systems not in the previous editions. Referenced by the model building codes and approved for use by most state and major city codes. STC and IIC ratings for numerous systems and height limitations for nonload-bearing partitions are also included.

GA-216-2004, *Application and Finishing Of Gypsum Panel Products (18 pp)*

Describes the most up-to-date industry and building code recommendations for the proper installation and finishing of gypsum panel products, including related accessories, over a variety of substrates and framing. A invaluable resource for drywall contractors.

GA-214-96, *Recommended Levels of Gypsum Board Finish (4pp)*

This publication, jointly produced by the four leading associations in the industry, assists specifiers, owners, and contractors to precisely describe th desired finish of individual walls and ceilings to meet specific needs. Avoi non-specific terms like "industry standards" and "workmanlike finish" an the problems they can cause.

GA-530, *Design Data-Gypsum Board*

Our most complete collection of current Gypsum Association publicatio containing the current edition of the Fire Resistance Design Manual (GA-600) as well as GA-214, GA-214-M, GA-216, GA-220, GA-221, GA-222, GA-223, GA-224, GA-225, GA-226, GA-229, GA-232, GA-2 GA-235, GA-236, GA-253, GA-254, GA-276, GA-290, GA-291, GA-40 GA-510, GA-515, GA-610, GA-618 and ICC ES ESR-1338. For descriptions of included publications, visit our website.

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FREE MATERIALS AND RESOURCES

Please send me the following:

☐ A copy of the brochure *Gypsum's Environment Story in North America.*

☐ A copy of the brochure *Environmental Assuran*

☐ A 2006 Catalog of *Publications, Resources, and Training Materials.*

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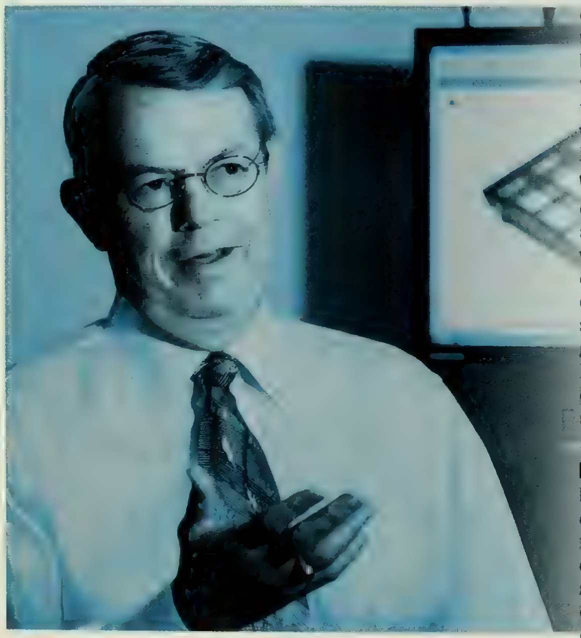
RUBY ON INTEROPERABILITY

DAVID I. RUBY, P.E., S.E., Structural Engineer. Principal, Ruby & Associates P.C., in Farmington Hills, Michigan. Specializing in steel designs that speed and ease constructability. Recently consulted on a community college project where his design and use of Interoperability resulted in a hyper-fast and efficient design—and a six-figure rebate from the fabricator to the school.



INTEROPERABILITY is the ability to manage and communicate electronic product and project data between collaborating firms. It allows the exchange and management of electronic information, where individuals and systems are able to identify, access, and integrate information across multiple systems. The goal of interoperability is to create greater efficiencies by eliminating the manual reentry of data, duplication of business functions, and the continued reliance on paper-based information management systems. The steel design and construction industry uses the CIMSteel (CIS/2) neutral file format to enable interoperability.

CONSTRUCTABILITY "When doing the pricing on a recent project, Douglas Steel Fabricating Corporation asked us to review the job to enhance constructability. It was a community college project that originally called for fully welded moment connections and knee-braced frames. The number of pieces and amount of field welding made the project uneconomical. Douglas Steel sent us the original design documents. We put together an alternative design that satisfied the intents of the owner and architect. We then transferred our CIS/2-compliant model back to Douglas Steel, enabling them to process the model in SDS/2 so they could bid both the original and alternative designs on time. Without CIS/2 Interoperability — or what used to be called Electronic Data Interchange — we couldn't have turned it around fast enough to keep the job on schedule."

VALUE "The architect's drawings, the site constraints, points of access, equipment — there are so many different things to consider to come up with the most economical product that meets a client's needs. A lot of people talk about value engineering. What that really means is examining a set of decisions that have already been made, and going from there. You're talking inside the envelope. But when you design for constructability and value, outside-the-envelope thinking leads to things like speed to market and achieving budgets. CIS/2 Interoperability is a tool that lets us think like this."

EFFICIENCY "For the community college, the floor beams were spaced at about 3-foot, center-to-center, with a very light metal deck and a reasonably thin slab. As a rough count, we eliminated over 700 members, as well as 11,000 shear studs from the floor system and it was designed so everything could be field bolted. We ended up with a metal deck system and a thicker slab that added a little dead load to the structure, but increased the strength of the composite beams. Basically, we made it easier to build, stronger and much more economical. Plus, we stayed on schedule because the design only took four days thanks to CIS/2 Interoperability."

PERSPECTIVE "Working with Fazlur Khan to design the Hancock Building early in my career gave me a different feel for construction. One thing about the Hancock: The steel out-raced concrete to the roof. In fact, steel was 25 floors ahead at one point! We even had to design temporary braces to keep the structure together because we were so far ahead. Faz was such a great concept engineer. I learned you can't just look at a building as a design — it has to be built too! Piece by piece, stability is an issue during construction. But once it's done, the issue goes away and you let the building act as it should."

COMMUNICATION "The advantage of Interoperability is speed through the elimination of paperwork and many layers of communication. Typically, a detailer would verbalize a problem to the fabricator who would submit a request for information to the contractor who'd send it to the architect. A response from the structural engineer would be communicated through the contractor to the fabricator and ultimately, back to the detailer. And many times the detailer would respond, 'That's not the question I asked.' This happens time and time again when you're trying to explain a three-dimensional problem in 50 words or less. CIS/2 Interoperability means the pertinent decision-makers — the engineer, detailer and fabricator — can look at the model in real-time, discuss the problem and collaborate on a solution. Better, faster communication is the value of Interoperability."

INTERACTION "With Interoperability, I work with the fabricator and detailer directly. We receive their files over the Internet, pull them into our system, make comments and send them back in just a couple of hours. This saves a tremendous amount of time and keeps us on schedule. Let's say there's a connection issue, or perhaps the fabricator has a question. We're not waiting because the drawings are in the mail. They just send us their three-dimensional models, and we solve the problem today. That's what Interoperability is all about."

UNIVERSAL "The files a fabricator works on are generated from the RAM model we send them. So when they pull our models into the system for detailing, they have the most current designs. There is less paperwork to keep track of and that's a significant advantage. If I send files at noon, by 3 o'clock the fabricator has his bill of materials. Manually, this process took a week. And we're not talking just 40 hours — but two or three people putting in 40 hours to pull that all together. Those extra hours are an expense completely eliminated due to Interoperability."

INTEROPERABILITY "The primary reason for Interoperability is to integrate design and construction processes by eliminating the need for manual re-entry of data. The advantage for steel is that the CIS/2 standard enables compliant software—Tekla, SDS/2, Bentley, RAM, FabTrol and others—to exchange data electronically with accuracy and speed. In fact, CIS/2 makes most structural steel design, detailing and manufacturing applications interoperable."

STEEL "Steel already gave us a much quicker delivery time. And that's now clearly enhanced by CIS/2 Interoperability. Steel lets me build a structure that can be modified, easily reinforced, adapted to another use and has overall economy from start to finish. Unless you're building sidewalks, there's never a reason not to use steel."

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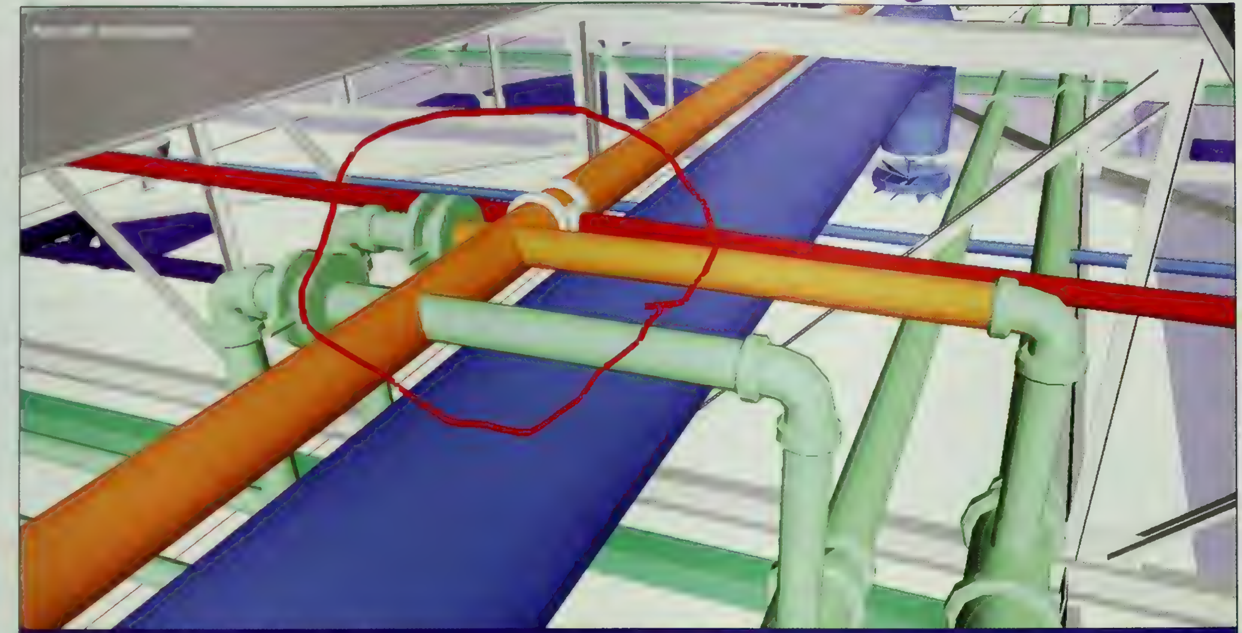
Getting on Board with Building Information Modeling



The 3-D model of General Motors' new engine plant allowed A/E firm Ghafari Associates and design team members to digitally detect and correct interferences between building components early in design.

Using 3-D modeling to integrate the design and construction process

> *"If you want to survive, you're going to change; if you don't you're going to perish,"*
> *- 2005 Pritzker Prize Laureate, Thom Mayne, FAIA, referring to Building Information Modeling at the 2005 AIA Convention*

ided by American Institute of Steel Construction

arry Flynn

rchitects are increasingly adopting Building Information Modeling (BIM) as standard practice, and rising to the challenge of "change or perish." The sentiment echoing throughout the building design and construction industry is that the days of two-ensional (2-D) drawing are numbered. BIM allows for more collaborative, integrated gn-construction teams that provide value to owners and design professionals.

computer-aided design (CAD) in the 1970's, BIM–the process of using three-ensional (3-D) modeling technology for creating, communicating, and reviewing building mation–is the next step in the evolution of the design and construction process. BIM rs a better way of delivering projects in a collaborative and less fragmented fashion that s the line between design and construction. With BIM, the project is designed and ally constructed during the design phase, which allows construction to proceed more kly in the field, reducing overall project costs, and enabling the building to begin ation sooner. The result is a benefit to owners, and the project team.

1 is about sharing better information, earlier in the process, and broadly," says Daniel dman, FAIA, director of school of architecture, University of Illinois at Chicago. He says holds the potential for immediate quantity surveys, identification of conflicts and ssions, fewer change orders, project delays, and cost overruns, and more clearly defined shared accountability, risk, and reward.

CONTINUING EDUCATION

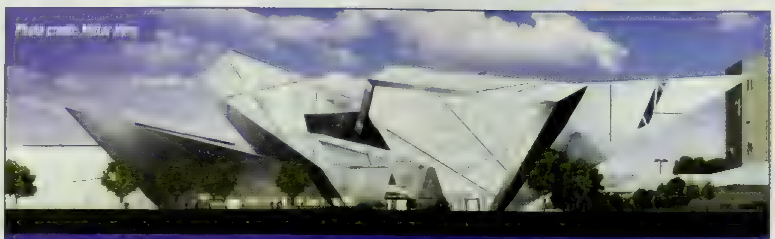
Use the learning objectives below to focus your study as you read **Getting on Board with Building Information Modeling.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 167, then follow the reporting instructions on page 206 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Apply Building Information Modeling (BIM) to a building project.*
- *Understand the major benefits of BIM.*
- *Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.*
- *Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.*

3-D modeling and team integration enabled steel erection of the Denver Art Museum expansion to be completed two months ahead of schedule.



The 3-D visualization model used on the Denver Art Museum expansion by local architect Davis Partnership, Studio Daniel Libeskind's joint venture design partner, became a BIM model during the project.

"BIM will change the distribution of labor in the design phases," says Carl Galioto, FAIA, partner, Skidmore, Owings & Merrill (SOM), New York. "When done correctly, the labor is front-loaded earlier in the design process, during the schematic and design development phases, and less in construction documents."

Steel Industry: A Model for Success

While most architects and other members of the building team are only beginning to apply BIM to projects, the structural steel industry is using 3-D modeling and interoperability–the use of software systems that are able to communicate and exchange data and information through a neutral file format–to integrate the design and construction process and speed the delivery of the structural steel package. Structural engineers are collaborating with steel detailers, fabricators, and erectors to share and exchange 3-D model information to create detailed designs for steel-framed buildings with tight tolerances. On numerous projects, this allowed mill orders to be placed earlier and steel to be delivered and erected on site more quickly, with few, if any field changes required. Fewer field changes enable the steel teams to provide a quality product, with less waste, and greater safety.

Using BIM on General Motors' new $300-million V6 engine plant in Flint, Mich., enabled the steel mill order to be placed eight weeks earlier than typically would be possible and steel erection began eight days early, says Lawrence F. Kruth, P.E., engineering and safety manager for Douglas Steel Fabricating Corp., Lansing, Mich. Construction of the plant was completed five weeks ahead of schedule with no change orders, says Samir Emdanat, manager of advanced technologies for the architectural/engineering firm Ghafari Associates, Dearborn, Mich. BIM enabled the project's integrated building team to shave 24 weeks off what typically would have been an 85-week design and construction schedule. In benchmarking previous projects, GM estimates that three to five percent of total construction costs would have been saved by implementing BIM on those projects, according to Laird Landis, GM's senior technological engineer.

Modeling the steel and mechanical, electrical, and plumbing (MEP) with tight tolerances meant that the steel frame, sheet metal, and piping all fit into place in the field like an erector set, reducing construction waste. Less waste and field work resulted in a safer construction site, with only one injury recorded on the project, which was unrelated to construction activity.

In Denver, the need to understand, document, and coordinate the com design by Studio Daniel Libeskind for the Denver Art Museum expans scheduled to open in Fall 2006, dictated sharing of the 3-D model betw Denver architect Davis Partnership and the project's structural engineer, s connection designer, and steel delivery team. "It's difficult to believe project could have been done without BIM," says Davis Partnership's M Cole, AIA. Working with general contractor M.A. Mortenson, the integr design-build steel team completed the project's steel erection two mor ahead of schedule, after starting the design process two months be schedule and returning $400,000 to the owner in the process.

Championing a Better Way

The structural steel industry has championed the use of 3-D modeling and value of a vendor independent suite of interoperable design and fabrica programs since 2001. Those efforts have paid major dividends for steel-fra projects in bringing many of the promised benefits of BIM to the struct framing system segment of projects. The lessons learned by the struct steel industry can be utilized to form a roadmap for design profession moving toward BIM implementation in their practices.

The structural steel industry recognized that errors made in produc interpreting and integrating 2-D construction documents were plaguing the construct industry at a time when owners were demanding that projects be completed in less ti while staying on or coming in under budget. Complicating the issue was the continu pressure being placed on architects and engineers to reduce fees and accelerate schedul The end result was a decline in the quality of construction documents resulting in avalanche of requests for information (RFIs) and change orders. This resulted in the stifl of innovative design, increased risk, escalated costs and extended schedules–the ex opposite of the desire of the project owner. The inability of design and construction te members to communicate and exchange data clearly and efficiently through the use of C based technology created an environment that fostered adversarial relationships instead collaboration and invited litigation. Selected structural steel projects, such as GM's

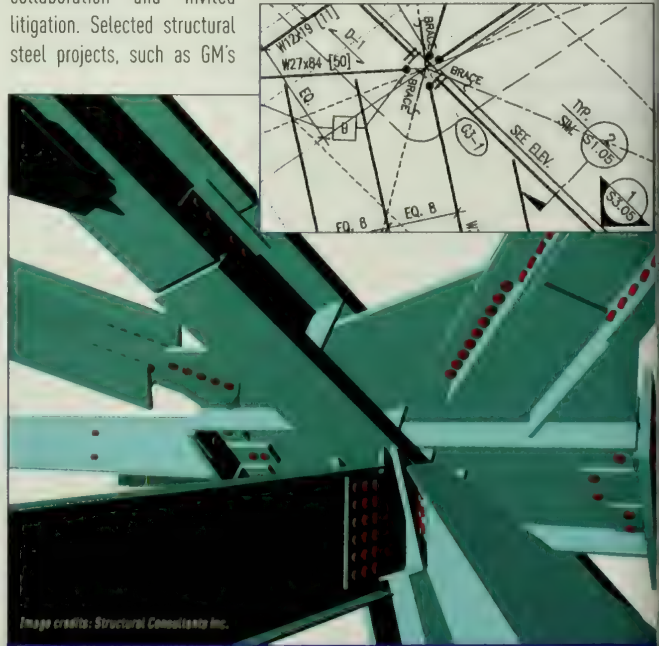


Image credits: Structural Consultants Inc.

A comparison of a 2-D drawing and a 3-D model of a typical steel connection on the Denver Art Museum expansion illustrates how much easier it is to visualize complex objects using 3-D modeling.

ne plant, the Denver Art Museum expansion, and many others, are overcoming these iers through the collaborative efforts of structural engineers and steel fabricators using modeling as a common design and construction vehicle. The transition to this process not been easy, requiring a redefinition of the design and construction process.

chitects Making the Transition

itects and architectural firms are beginning the process of transitioning from existing environments to BIM, utilizing 3-D computer-aided design and construction, training f, and applying BIM successfully on projects, as part of integrated design and struction teams. For that transition to be effective, BIM must be clearly understood in s of its benefits, technology, and implementation.

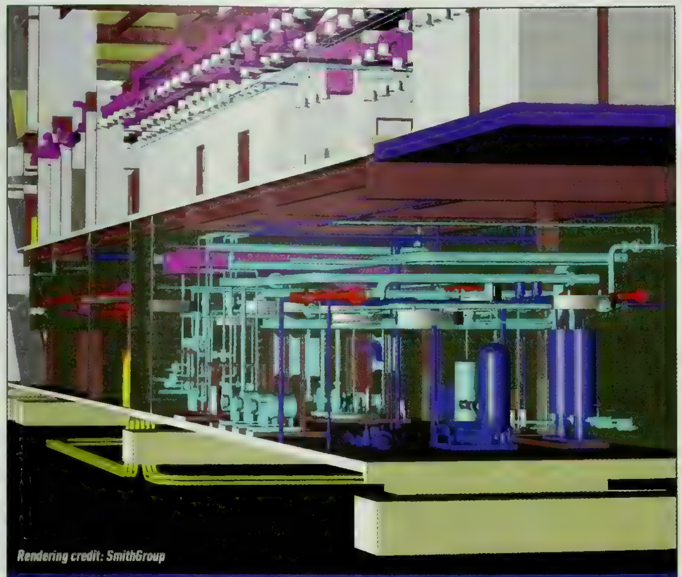
as the success of CAD in transitioning building design from the drafting table to the puter required a cultural shift for the entire building design and construction industry, transition from CAD to BIM tools and processes will require a similar shift as well. rnally, firms need to evaluate how this transition will affect their in-house technology, f, and their ability to fund and support the transition. Externally, the firm must seek out opriate projects and partners that they believe lend themselves to the BIM process and e forward.

> ***"BIM will change the stribution of labor in the sign phases. When done correctly, the labor is ont-loaded earlier in the sign process, during the schematic and design evelopment phases, and less in construction documents." -- Carl Galioto, FAIA, partner, idmore, Owings & Merrill (SOM), New York.***

SOM and Detroit's SmithGroup are two large, multi-office A/E firms making the transition to BIM. SOM's New York office is using 3-D modeling on a number of projects, including New York's Freedom Tower. "We're looking at BIM as being a complete database, as opposed to just 3-D information," says SOM's Galioto. The firm is using the model to arrive at and optimize intelligent solutions, test applications and simulations, such as thermal, daylight, glare, and computational fluid dynamics–the use of technology to study things that flow–for heating, ventilating, and air-conditioning. The firm also is using BIM for collision detection, points in the 3-D model that illustrate where the building's structure and MEP ducts, piping, and equipment improperly intersect with one another.

next step for SOM is interoperability, the exportation of data and information via the 3-D lel, as opposed to producing traditional 2-D drawings. The firm is working with curtain wall iufacturers on this process. "Interoperability is the challenge," Galioto says. "We are ıding a lot of time finding ways to get the software to work together. It all comes down to integration of multiple models. The structural steel industry is ahead of the curve on this."

goal of SmithGroup, a firm with 800 architects, is to be modeling all of its projects in in 2006. The firm has implemented BIM on a number of key pilot projects throughout United States, including a corporate pharmaceutical lab facility in the Detroit area, the headquarters of general contractor Sundt Construction in Tempe, Ariz., and an ansion of Comer Children's Hospital in Chicago. The Comer project, due to be completed Spring 2006, is the Chicago office's ninth BIM project, the first to integrate the itecture with the structural steel frame and the mechanical and electrical systems. M is so important for where we're going," says principal Jens Mammen, leader of the ago office's BIM transition. "Strategically, BIM is on the verge of revolutionizing how we ver our projects. We don't draw buildings any more, we build buildings."


Rendering credit: SmithGroup

In the design of Chicago's Comer Children's Hospital expansion, A/E firm SmithGroup integrated the architectural design with the structural steel frame and mechanical and electrical systems.

The true value of an integrated BIM project is realized downstream, during the design and construction process. Collision detection and coordination of the project with design and construction team members is where BIM benefits the SmithGroup financially and saves costs on the project, says Mammen. "Fifty percent of coordination is about the 2-D drawing itself," he says. "With the 3-D model, the project is so well coordinated and built so quickly that we're receiving very few questions from the field, especially during the bidding process."

On the Comer project, the firm received only six RFIs in the bidding process, an astoundingly low number compared to the hundreds that would typically be received. For Mammen, the benefits attainable through BIM are too great to ignore: "I can't foresee ever going back to the 2-D world."

Transitioning the Practice

The success of CAD over the last 30 years has resulted in most design firms being so firmly entrenched in the technology that it can create a barrier to the transition to BIM, says SmithGroup principal Rick Thoman, AIA, IT manager in the firm's San Francisco office. But SOM's Galioto says architects will welcome the transition: "By switching to the model, our people say that they feel more like architects because they are working in three dimensions."

Transition to BIM will require research, information gathering, and financial backing of the firm's leadership. Unlike the early days of CAD, when a junior staff member or draftsperson could be placed in front of an early generation PC, given an early version of a CAD package and be told to figure out a "better, faster way to draw," the transition to BIM will require commitment from senior staff members intimately involved with design decisions and processes.

The transition to BIM will require an investment of capital and resources from firms, demanding strong commitment from the firm's management over an extended period of time. In 2006, the typical cost of a BIM application can range between $5,000 and $6,000 or more, but this is only a small portion of the cost. Annual maintenance subscriptions fees, consulting fees, training, current generation hardware, and climbing the learning curve will cost much more than the cost of the software. To ease the transition while holding down

How BIM Benefits Architects

Building Information Modeling offers architects the following advantages:

- *Enhanced influence over the entire life of the project:* BIM enables architects to be the primary shaper of the built environment. Over time, architects have seen their influence upon building projects erode as project progress toward completion. BIM gives architects a greater capability to see their designs through to project completion. The BIM process gives architects the power to estimate costs in real time, keeping projects on schedule, avoiding the necessity for last-minute changes, and reducing project scope as the only means of addressing project cost overruns.

- *Providing a better solution to clients:* As the member of the building team with the earliest contact and the closest relationship with the owner, the architect has the opportunity to enhance the firm's image as an industry leader on the cutting edge of technology and industry practice. Being an experienced BIM practitioner separates a firm from the competition, giving the architect a powerful way to bring added value to the owner and their project. Architects can demonstrate to owners how BIM can be implemented to reduce project costs, shorten project schedules, increase project quality, and improve safety through information sharing, emphasis on front-loaded design and virtual building, and off-site fabrication of building components. One of the maxims in the construction world is that a project owner may ask for cheaper, faster and better, but will only be able to get two of the three. The evidence from projects constructed utilizing a BIM methodology indicates that it is possible to deliver completed projects that are completed faster, are less expensive, of higher quality, and with increased project safety, and reduced exposure to risk and litigation.

- *Increased profitability:* Early collaboration with the structural engineer, steel team, MEP consultants and other specialty contractors leads to more accurate and complete drawings the first time, as well as efficient resolution of RFIs, and fewer RFIs later in the project. This saves time and money for the architect in that the project proceeds more efficiently and quickly to completion, allowing the firm to handle more projects. Fewer, if any, change orders means a reduction in the cost of those changes and delays attributed to the architect.

- *Reduced risk and possibility of litigation:* The integration of the entire design team through the use of 3-D computer-aided design and construction technology nurtures cooperation, trust, and team building, which reduces risk instead of increases it. Interferences are identified and resolved earlier on in the design process, reducing the number of issues that arise late in the project and lessening the likelihood of litigation. With BIM, it can truly be said that before construction begins, an as-built model of the project exists.

- *Preservation and growth of the practice:* BIM is an important innovation and trend for the building design and construction industry, and is increasingly applied to large-scale, complex projects. Most industry experts predict that in 10 years, 3-D-integrated BIM will be the principal method in which the built environment is designed and constructed. Architects have the opportunity to step forward, engage the process, and assume more responsibility for their building designs. As much as a technological change, the transition to BIM is a cultural change, requiring a rethinking of how the design and construction process can and should work.

costs, firms such as SmithGroup are selecting a software purchasing option calle "crossgrade," which allows a firm to migrate a software license from one software vendo product to another of its products. This also allows a firm to continue to receive upgra for both products, says Thoman.

Transitioning a firm can be a complex and challenging process, especially for large, mu office firms with multiple disciplines. Some suggestions include:

- Consider forming a team comprised of individuals from the different offices a disciplines within the firm, and possibly an outside non-vendor consultant to evalu the firm's needs, and to develop a perspective on BIM in the industry.
- Appoint one individual at the firm to champion the transition and coordinate overall process.
- Consider conducting tours of the firm's offices with upper management to explore h to accelerate implementation of BIM. SmithGroup is implementing this practice.
- Conduct just-in-time training of staff on BIM tools in conjunction with actual build projects. SmithGroup, SOM, Ghafari Associates, and others agree that this is the m effective training method. Abstract training won't do, says SOM's Galioto.
- Be proactive about implementing the BIM tools that will prepare the firm to mo forward on a project. Care must be taken not to overcommit to a solution until there a clear understanding of the desired workflow for the trial project. Ideally, the proj should be one for a repeat client with whom the firm has a positive, open relationsh The client should be part of the transition process, recognizing the benefits that c accrue, while being aware of the challenges that can often occur on pilot projects.

Enter the transition with a proactive mindset:

- Perform due diligence by conducting research, reading industry reports, white pape and publications.
- Attend meetings and conferences where BIM is on the agen
- Communicate with peer firms to learn about their approach to the transiti
- Seek information and advice from industry professionals who have had success w 3-D modeling and integration to lower costs and shorten project schedules for owne such as steel industry detailers, fabricators, and structural engineers.
- Use software vendors as information resources and providers of traini
- When using out-of-the-box BIM software, consider developing and writing guidelines project teams, which will be using the technology, so elements such as title boxes a pull downs will automatically be there for them, as is the case with technology th meets the present CAD standard.

Rendering credit: Putnam, Collins, Scott Associates

With the steel team utilizing a design-build framework and 3-D modeling, delivery of the structural steel for Mt. Tahoma High School, Tacoma, Wash., designed by BLRB Architects, Tacoma, cut the construction schedule by three months.

plying BIM to Projects

e a firm has conducted its research and is comfortable with the tools it has in place, best way to get started is to just do it. Experts recommend that architectural firms carefully select projects for BIM and apply them. One litmus test in determining if a project is right for BIM is whether a firm can deliver a completed project to the owner that is cheaper, faster, better, and safer by utilizing the BIM process. ■

CLICK FOR ADDITIONAL REQUIRED READING

article continues online at ***http://archrecord.construction.com/resources/conteduc/archives/0604steel-1.asp.*** To receive AIA/CES credit, you are required to read this additional text. The quiz stions below include information from this online reading. To receive a faxed or emailed copy of the material, contact Larry Flynn by e-mail at flynn@aisc.org or call (312) 670-5437.

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EARNING OBJECTIVES

fter reading this article, you should be able to:

Apply Building Information Modeling (BIM) to a building project.

Understand the major benefits of BIM.

Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.

Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.

NSTRUCTIONS

efer to the learning objectives above. Complete the questions below. o to the self report form on page 206. Follow the reporting instructions, nswer the test questions, and submit the form. Or use he Continuing Education self report form on *Record's* web site—*rchrecord.construction.com*—to receive one AIA/CES Learning Unit ncluding one hour of health safety welfare credit.

UESTIONS

. The key to reducing risk and building trust in a BIM project is:
   - **a.** Collaboration, integration, and communication
   - **b.** A good lawyer
   - **c.** Software
   - **d.** A detailed schedule

. The most important element of BIM on which to focus is:
   - **a.** The software
   - **b.** The process
   - **c.** The model
   - **d.** The budget

3. With BIM, the project is designed and virtually constructed up front in the design phase, which allows construction to proceed more quickly in the field, reducing overall cost of a project and enabling the building to begin operation sooner.
   - **a.** True
   - **b.** False

4. The true value of BIM is realized:
   - **a.** During pre-planning
   - **b.** Upstream earlier in the design phases
   - **c.** Downstream in the design and construction process
   - **d.** After the project is completed

5. A Building Information Model:
   - **a.** A complete 3-D digital representation of a building system or subsystem
   - **b.** In most cases can replace the term 'construction documents' as it relates to building construction.
   - **c.** May include other BIMs.
   - **d.** All of the above

6. Which of the following is not a benefit of BIM for the architect:
   - **a.** BIM gives the architect enhanced influence over the entire life of the project.
   - **b.** BIM enables the architect to provide a better solution to the client.
   - **c.** BIM reduces the architect's risk and possibility of litigation.
   - **d.** BIM reduces the architect's work load and responsibility.

7. Evidence from projects constructed utilizing a BIM methodology indicates that it is possible to deliver completed projects to clients that are completed faster, are less expensive, of higher quality, and with increased project safety and reduced exposure to risk and litigation.
   - **a.** True
   - **b.** False

8. Interoperability may be defined as:
   - **a.** Use of software systems that are able to communicate and exchange data and information through a neutral file format.
   - **b.** A practice employed to evaluate the operational impacts of BIM on a firm's bottom line
   - **c.** A labor-saving construction technique
   - **d.** The cross-training of staff on CAD and BIM equipment

9. Experts agree that the best way to start working in BIM is to:
   - **a.** Wait until the firm has transitioned its software
   - **b.** Thoroughly train staff in the use of BIM tools before starting a project
   - **c.** Select a project and "just do it"
   - **d.** Begin working in BIM only after the industry as a whole has transitioned

10. The transition to BIM is not without its hurdles and requires some reallocation of:
   - **a.** Effort
   - **b.** Cost
   - **c.** Risk
   - **d.** All of the above

The American Institute of Steel Construction provides specifications and technical information
that makes the design and construction of structural steel easier and more economical.

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Boca Grande, the home above, and its Follansbee roof were directly in the path of Hurricane Charley.
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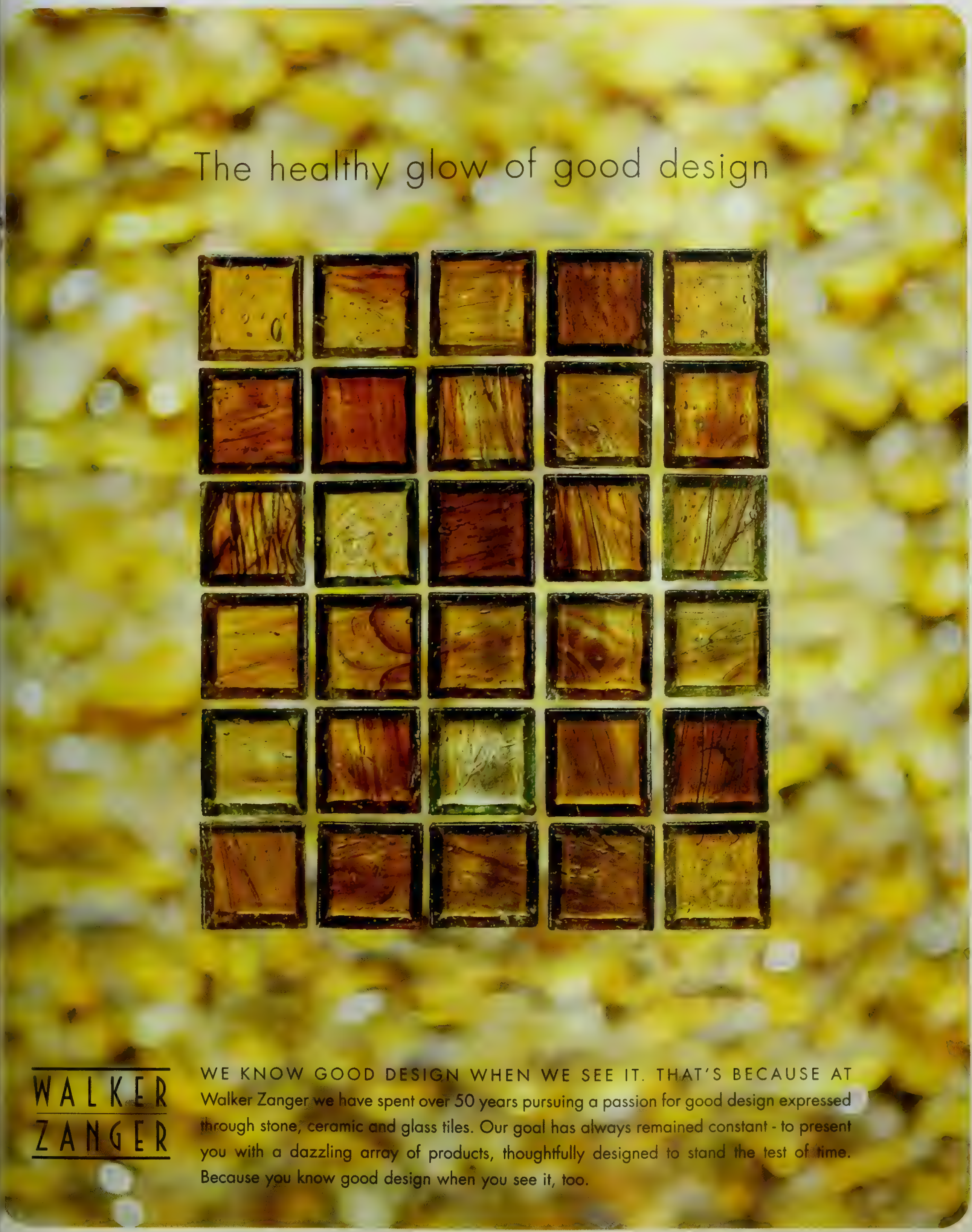

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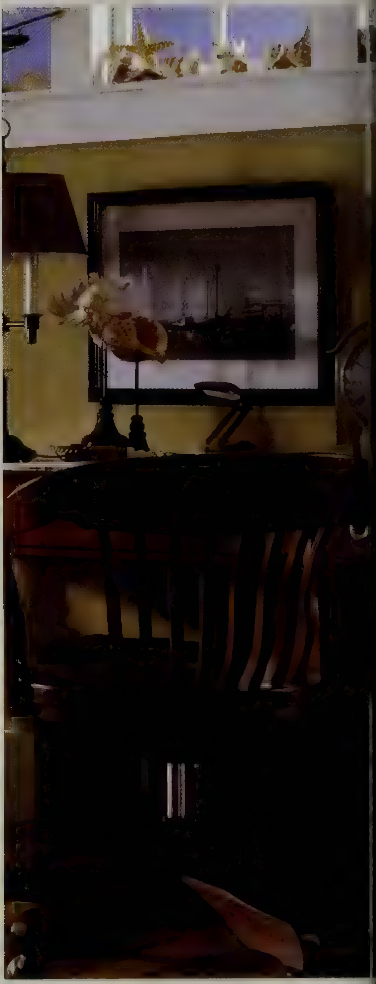

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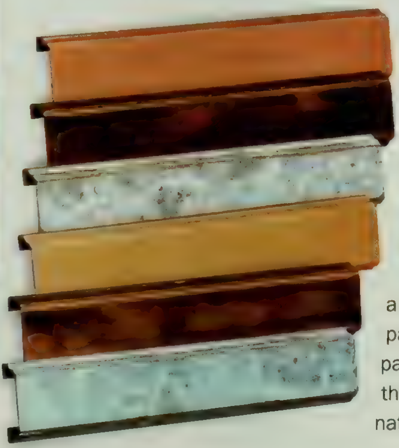
Products

Doors & Windows

Our roundup of door and window products includes introductions seen at this year's **International Builders Show** in Orlando. At the show, luxurious options, such as copper-and-bronze-clad windows and doors, stood alongside modern conveniences, such as **solar-powered blinds**. *Rita Catinella Orrell*

Handcrafted copper- and-bronze-clad windows and doors

ndow detailing (above). pper and bronze ette (right) ranges n Natura (unpatinated) Verdigris (green).



A radically different addition to Loewen's extensive selection of Douglas fir and mahogany offerings, the Cyprium Collection features handcrafted copper- and-bronze-clad windows and doors. Artisanal in detail, down to the soldered exterior joints, capped sill ends, and recessed mullions, the collection is named after Aes Cyprium, the name ancient Romans gave to the copper first mined in Cyprus.

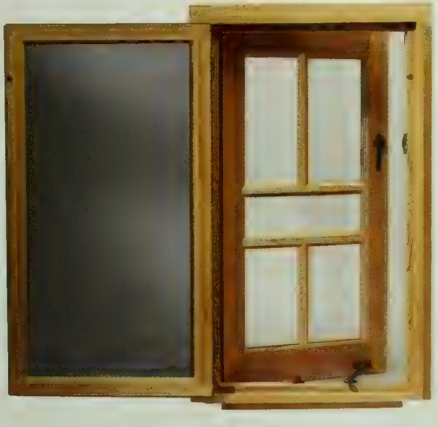
The collection, available in casement, picture/direct set, awning, speciality windows, and terrace doors, develops patinas that define the character of a home's natural locale. Environmental factors such as humidity and salinity work together with time to coat the surfaces with a distinct and ever-changing patina. A palette of custom patina finishes is available within the collection: Natura (unpatinated), Umbra (brown), and Verdigris (green).

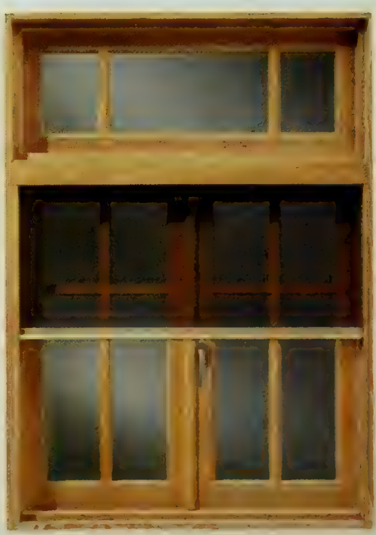
Nominal, .040"-thick copper and bronze is used to craft a cladding for sash and frame segments as well as for Simulated Divided Lite bars. All Cyprium Collection products are built on a Douglas fir or mahogany core, which provides natural wood window interiors. The windows are built with a triple-laminated sash that accommodates deeper cladding and glazing-stop profiles to deliver an architecturally balanced appearance. Cyprium door and entryway systems are equipped with standard multipoint hardware with stainless-steel exposed components. Loewen, Manitoba, Canada. www.loewen.com **CIRCLE 200**

'indow and door prototypes have historic look and modern touches

llections is a group of high-end ndow and door prototypes from ather Shield that blend classic -world character with fashione hardware and eclectic finishes. roduced at last January's ernational Builders Show, the ndows and doors were developed a window chassis with traditional perties and will feature a blend assorted wood species and erse finishes. Surprises include ush-out casement design, le-away roll screens, and old-le hardware. The massive portions of the stiles and rails no the aesthetic of historic wood ndows, and a solid 5¼" jamb es the windows additional heft.

Standard putty glaze stops, erior glazing bead, and Simulated ided Lite bars deliver the energy efficiency of new technology while capturing the look of historic windows and true divided lites. Weather Shield has collaborated with Stone River Bronze to offer handcrafted hardware on all Collections windows and doors, with a complete product line of pulls, plates, hinges, levers, and lifts. Initial Collections window product offerings will include push-out casement, push-out French casement, awning, transom, picture, and single-hung tilt with wood jamb liner (1¾" sash). Collections' initial door offering will include a French sliding door, hinged patio door, and premium entrance door. Both hinged wood screens and concealed wood screens will be available to enhance the look and function of the new line. The collection is scheduled to be introduced in early summer 2006. Weather Shield, Medford, Wis. www.weathershield.com **CIRCLE 201**





The windows will feature hinged wood screens (above) and hide-away roll screens (right).

Products Doors & Windows

► Latest low-E generation

Andersen Windows' high-performance Low-E4 glass features an exterior coating that, when activated by sunlight, helps reduce dirt buildup and water spots, and promotes faster drying. Exclusive to Andersen windows and doors, the glass will be standard on the manufacturer's 400 Series products. Low-E4 glass is on average 41 percent more energy efficient in summer and 35 percent more energy efficient in winter than standard dual-pane glass. The glass coatings can also reduce glare and cut UV light by 83 percent. A removable protective film applied to the interior and exterior sides of the glass provides additional protection against shipping and installation hazards. Andersen Windows, Bayport, Minn. www.andersenwindows.com **CIRCLE 202**

▲ Making his home yours

Moulding Associates and Biltmore Estate For Your Home have partnered to create a collection of wood entry doors designed to evoke the luxury of Biltmore Estate, George W. Vanderbilt's historic property in Asheville, North Carolina. The collection features the exclusive hardwood Malaga Cherry as well as an American white oak hardwood. Biltmore has also collaborated with Period Brass to offer decorative and functional hardware for door, cabinet, furniture, and bath applications in a range of motifs. Biltmore Estate For Your Home, Asheville, N.C. www.biltmore.com **CIRCLE 205**

► Between-the-glass panels

Pella's new decorative panels for Designer Series windows and patio doors complement the manufacturer's line of between-the-glass window fashions. Designer Series is Pella's exclusive wood window and patio door collection that offers snap-in, snap-out blinds and shades in 25 different colors. Other enhancements to the Designer Series collection for 2006 include fabric panels and panels simulating stained glass that insert between the panes of glass, and an expanded grille offering. Pella, Pella, Iowa. www.pella.com **CIRCLE 203**

▲ Renovating our coastal treasures, one window at a time

The Jeld-Wen Reliable Lighthouse Restoration Initiative is designed to help local lighthouses that are badly in need of care and maintenance. For Jeld-Wen's first test projec the company donated and replaced the windows and entry door at the historic Umpqu River Lighthouse, located on Oregon's southern coastline. Jeld-Wen replaced the warpe entry door with a custom fiberglass front door and installed 12 architecturally correct, energy-efficient, double-hung wood windows to replace the aluminum windows installe in the early 1980s. Jeld-Wen, Klamath Falls, Ore. www.jeld-wen.com **CIRCLE 204**

◄ Solar power blinds

Velux now offers solar-battery-powered blinds for its fixed skylights. The new blinds offer th convenience of an electrical blinc without the expense of installatio by a professional electrician. The built-in solar cell converts direct diffused light from the sun to ele trical energy, which is stored in a battery with a capacity of approx mately 500 operations without recharge. The blinds will be competitively priced with existing blin offerings from the manufacturer. Velux America, Greenwood, S.C. www.veluxusa.com **CIRCLE 206**

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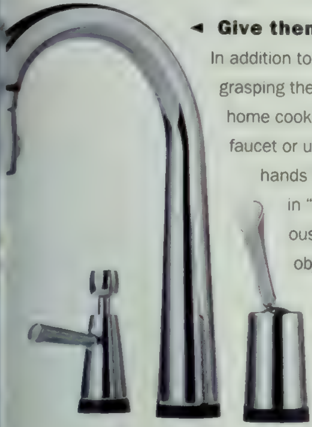
Product Briefs



◄ Give them a hand in the kitchen

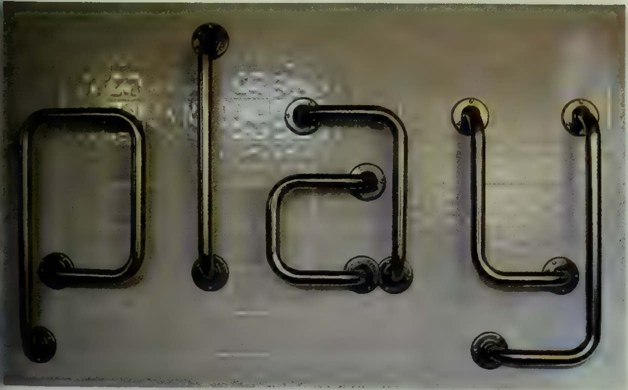
In addition to the traditional activation method of grasping the handle, the Pascal Culinary Faucet allows home cooks to activate water flow by tapping the faucet or using the hands-free option, reserving both hands for cooking and cleanup. While Pascal is in "hands-free" mode, water will run continuously as long as the water work space has an object in it. Pascal also features a pull-down spout to simplify kitchen duties such as filling pots. Water temperature and flow are set by the faucet's single-handle manual valve. Delta Faucet Company, Indianapolis. www.brizo.com **CIRCLE 207**

Alternative to stainless

spired by the growing interest in metal- finishes for kitchen walls, fixtures, icksplashes, and countertops, the led Bronze antique metallic finish from nn-Air can be used as the focal point nong stainless appliances or as an itire suite. Stainless-steel accents tie e appliances into a variety of kitchen signs. The finish is available on select frigerator, dishwasher, wall-oven, hood, oktop, and warming-drawer models in ces competitive with Jenn-Air's floating ass offerings. Jenn-Air, Newton, Iowa. vw.jennair.com **CIRCLE 209**

Grab-your-attention handrail set

itish typeface designer Andrew Byrom has translated his skill for creating unique letter its into the Grab-Me series of handrails. Grab-Me is a collection of 26 3D steel tube ters/grab bars for use in swimming pools, spas, bathrooms, or as indoor and outdoor gnage. Available exclusively from the designer, the made-to-order letters (about ,000 each) are manufactured using 1.5"-diameter stainless-steel tubing with a 180- t brushed finish. Andrew Byrom, Chicago. www.andrewbyrom.com/grabme **CIRCLE 210**



Product of the Month
Lumistone Solid Surface

Under normal lighting conditions, Lumistone offers all of the typical characteristics of premium acrylic-based solid surfacing; but in a darkened environment, it glows with a greenish yellow or blue cast.

Manufactured by Tower Industries, the material was originally developed to be used as a safety product and is ideal for providing a clear path for evacuation in case of an electrical power loss in airplanes, theaters, or public spaces. Possessing solid surfacing's inherent ability to be thermoformed or shaped by the same method as wood, it can also be cast in a variety of shapes, for applications ranging from safety handrails on a cruise ship to bar tops in a nightclub to custom inlays in a residential countertop that display hidden messages in the dark.

Lumistone is available in a range of color options in sheet form, strips for use as inserts, precast in bowls or other shapes, or as a precatalyzed liquid mixture for creating custom decorative inlays. The strength and duration of the material's luminous glow can also be adjusted as needed. Tower Industries, Massillon, Ohio. www.towersurfaces.com CIRCLE 208

◄▲ "Retro" grade time travelers

The brainchild of two architects and two graphic designers, the multifaceted AvroKO is notable for its highly conceptual eateries (such as PUBLIC in New York City, owned and operated by the company), residential interiors, and brand imaging. Not surprisingly, this diverse design studio's first furniture collection takes its cues from the preindustrial cars and cycles of the late 19th and early 20th centuries. Dubbed The Transport Series, the richly detailed mix of cold-rolled steel, red-tinged leather, and walnut comprises a chair, ottoman, and stool (shown), as well as a height-adjustable table, floor lamp, and playful storage barrel/pet bed. AvroKo, New York City. www.avroko.com **CIRCLE 211**

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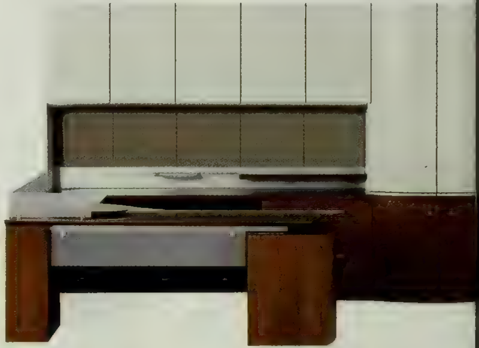
Product Briefs

▲ Path of roses

Spanish-rug diva Nani Marquina offers a range of new products for 2006 from her eponymous company. Basic, a lin of six collections that play with color and texture, offer the sophisticated style expected from the manufacturer but with more general appeal. For fans of avant-garde design, the company doesn't disappoint with Roses, a Marquina design made with felt die-cut "petals" that gives movement and softness to the rug. It is available in red, brown, ivory (above), orange, and gray. Offerings from collaborating designers include the Tomato Pouf seat and the Stone-Wool collection of blob-shaped wool area rugs. The Terence Conran Shop, New York City. www.nanimarquina.com **CIRCLE 21**



► Menu of workspace options

Designed by Richard Holbrook, the Menu casegoods platform offers 10 work-surface shapes and varied storage components that lend themselves to space-efficient configurations. All of Menu's materials and finishes may be optioned up or down to meet a range of budgets and reflect employee status within an organization. Menu's material palette includes satin aluminum structural elements; glass and marble floating worktops; and 3Form modesty panels, doors, and privacy fences. Gunlocke, Muscatine, Iowa. www.gunlocke.com **CIRCLE 213**

▲► Protected from attic to countertop

Debuted at this year's Builders' Show, Granite Certified by Dupont is the first all-natural stone surface from DuPont Surfaces. Available in 15 colors, the granite is protected by a proprietary sealant that fills in natural cracks, helps repel stains, and maintains the stone's natural hue. Also launched at the show is Tyvek AtticWrap, the first breathable roofing membrane to completely seal a home's building envelope. Specially targeted for the attic, the wrap creates a continuously airtight space that prevents air and water intrusion and helps conserve energy. DuPont, Wilmington, Del. www.granite.dupont, www.construction.tyvek.com **CIRCLE 214**

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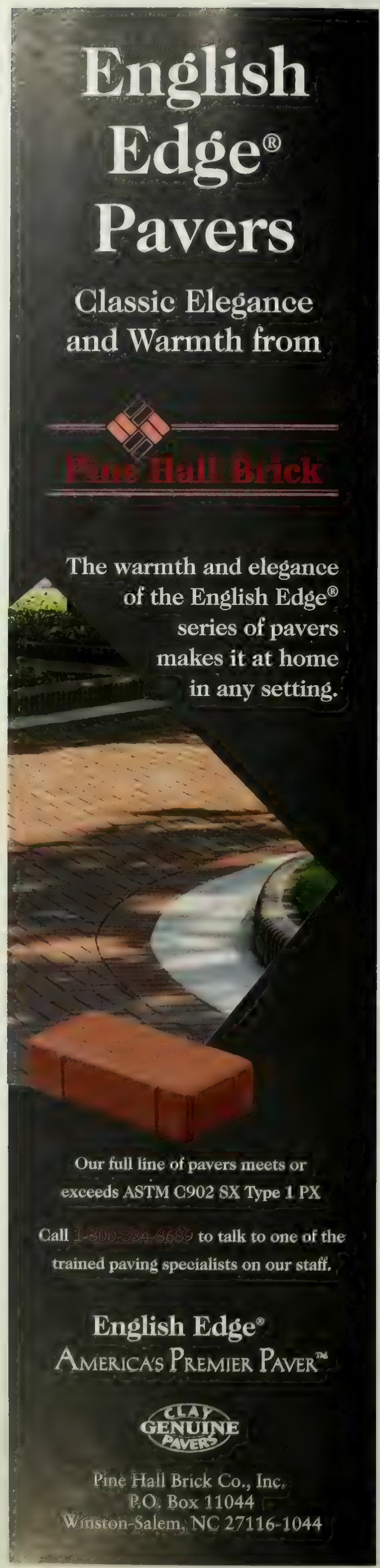
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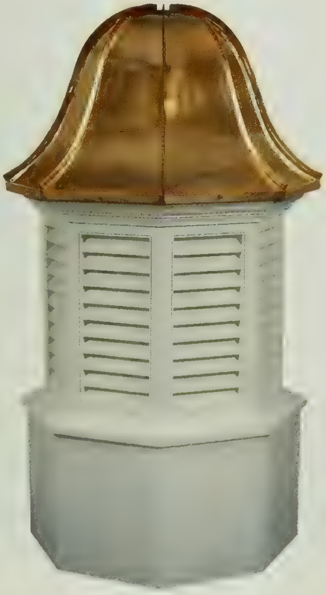
Product Briefs

► Steel framing system

The Building Components division of USG has introduced a new residential framing system as a modern alternative to traditional wood "stick" building methods. The light-gauge steel framing components, including roof trusses, wall panels, and floor panels, are factory manufactured to ensure precision and quality. The components can be incorporated individually or as a complete engineered framing system. After the components are delivered to the job site ready to install, small crews can frame a home in a fraction of the time it takes using traditional methods. Steel components are dimensionally more stable than wood and resist fire, mold growth, and termites. USG, Chicago. www.usg.com **CIRCLE 21**

▼ Glass-reinforced gypsum panels

Chicago Metallic has expanded its line of Monarch GRG ceiling panels to include six new patterns. In total, the classically sculptured, glass-reinforced gypsum panels are now available in 12 decorative profiles, including the new Executive Wood Mahogany, Centennial, Bamboo, Classic Wood Mahogany, Victorian Poppy, Palm Leaf, and Classic Textured patterns. Monarch panels help create artistic ceilings ideal for the hospitality market or any room seeking a dramatic or historic appeal. The panels, approved by the U.S. Coast Guard for marine applications, are unaffected by moisture and humidity. Chicago Metallic, Chicago. www.chicagometallic.com **CIRCLE 216**



▲ Cupola collection

The new William E. Poole Collection is a collaboration between Fypon and William E. Poole, a leader in American home design. The low-maintenance urethane Fypon pieces include a line of 25 ornamental cupolas ranging in height from about 5' tall to more than 7' tall. The low-maintenance cupolas are made of cellular PVC for the base and roof support, with the sill, crown molding, and louvers made of urethane. The designs include bell, pagoda, and hipped roof styles with the center portions including the decorative accents of louvers, glass, or wren birdhouses. Fypon, Archbold, Ohio. www.fypon.com **CIRCLE 217**

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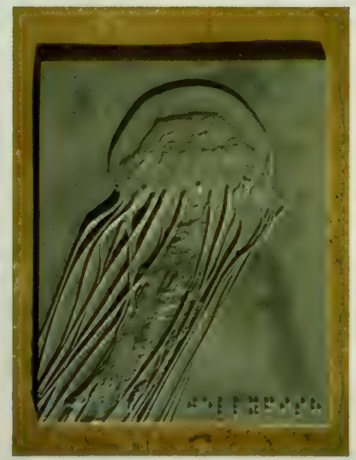
Product Briefs

▼ Fire-resistant particleboard

Temple-Inland has introduced TemStock-FR, a fire-rated particleboard for interior usage in industrial and commercial construction projects. Combining the cost-efficiency and versatility of particleboard with the fire-retardant properties required by commercial construction codes, TemStock-FR is an option for fabricating cabinets, fixtures, furniture, and various types of wall-system assemblies typically used in schools, offices, hospitals, and other commercial structures where fire safety is a primary concern. The particleboard is manufactured in thicknesses of ¼" through 1⅛" and in standard 4' sizes. Temple-Inland, Diboll, Tex. www.templeinland.com **CIRCLE 218**

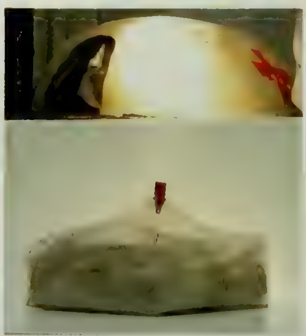
► It's stainless, but it's not steel

The result of nearly three years of intensive R&D, NuCrete is a stainless concrete now available from the precast-concrete experts at Sonoma Cast Stone. Made of actual concrete (not an epoxy-covered surface), Nucrete can withstand the harshest acids and oils and is offered with a five-year guarantee against staining. It is created by modifying concrete's traditional curing and finishing process and introducing some proprietary additives to the batch mix and finish. Sonoma Cast Stone products are available through a network of more than 100 authorized dealers around the country. Sonoma Cast Stone, Petaluma, Calif. www.sonomastone.com **CIRCLE 219**



◄▼ Creativity that can change the world

The Saatchi & Saatchi Award for World Changing Ideas promotes inventions that have the potential to change the world. The 11 finalists in the fourth annual competition included Photo-Form Tactile Graphics [RECORD, October 2004, page 233] that allow "pictures" to be seen by a blind person's touch (far left). The $100,000 grand prize was given to Peter Brewin and William Crawford of London's Royal College of Art for Concrete Canvas, a rapidly deployable hardened shelter for victims of natural or man-made disasters (model, near left top; undeployed shelter, bottom). Saatchi & Saatchi, New York City.www.saatchi.com/worldwide/innovation_award.asp **CIRCLE 220**



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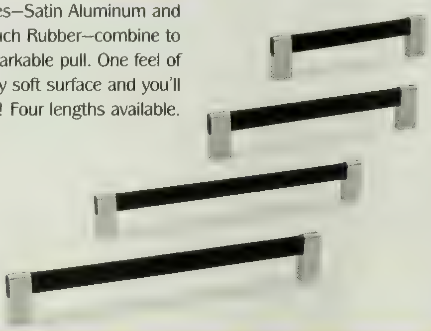

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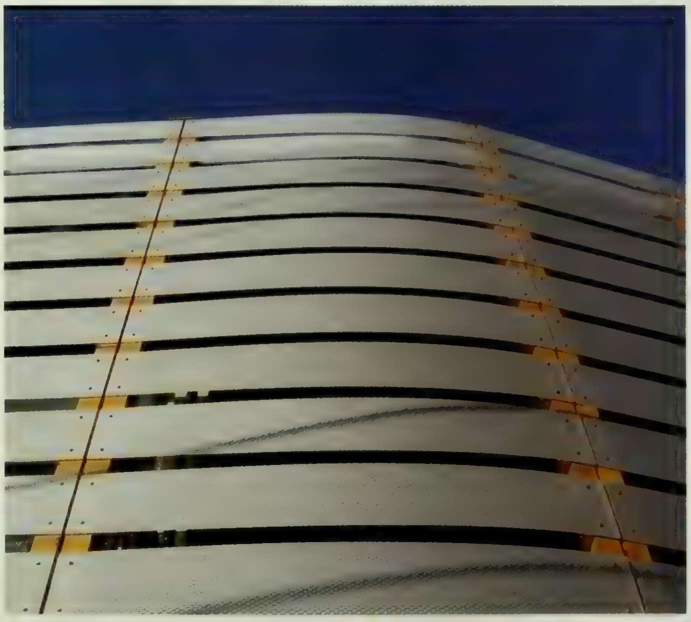

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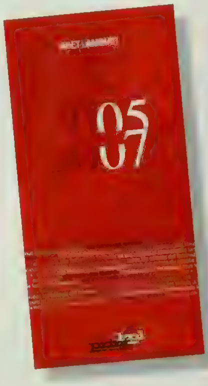
Product Resource: Literature

Green building products guide

The expanded and revised 6th edition of the *GreenSpec Directory* of environmentally preferable building products contains nearly 2,000 listings, providing a complete source for green building product information. The directory includes 1,997 product listings—more than 200 product listings were added and 100 were dropped from the last edition. BuildingGreen, Brattleboro, Vt. www.GreenSpec.com **CIRCLE 221**

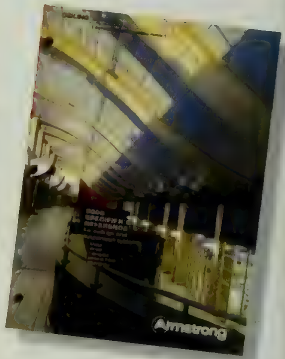


Brochure of laminate designs

Abet Laminati is offering a new brochure describin more than 500 decorative, high-pressure-laminate surfaces, including metallics, wood grains, texture solid colors, digitally printed or silk-screened designs, and Diafos translucent designs. All products are stocked in five locations throughout No America. Abet Laminati, Englewood, N.J. www.ab laminati.com **CIRCLE 222**

Greener ceilings catalog

Armstrong's 2006 *Ceilings Systems* catalog places an increased emphasis on green issues. The mineral fiber/fiberglass sections include a chart indicating the ceiling's ability to help attain LEED credits, and the catalog is printed with vegetable-based inks on paper made from hydrogenerated energy and approved as an FSC "chain of custody" stock. Armstrong World Industries, Lancaster, Pa. www.armstrong.com/ceilings **CIRCLE 223**



Hardwood sports floor catalog

A new, 12-page catalog from Action Floor Systems details the company's extensive line of hardwood sports systems. The 200 catalog features two new systems along w specifications for 16 other subfloor systen that are designed to absorb shock, provid uniform resiliency and ball bounce, and reduce vibration and sound transmission. Action Floor Systems, Mercer, Wis. www.actionfloors.com **CIRCLE 224**

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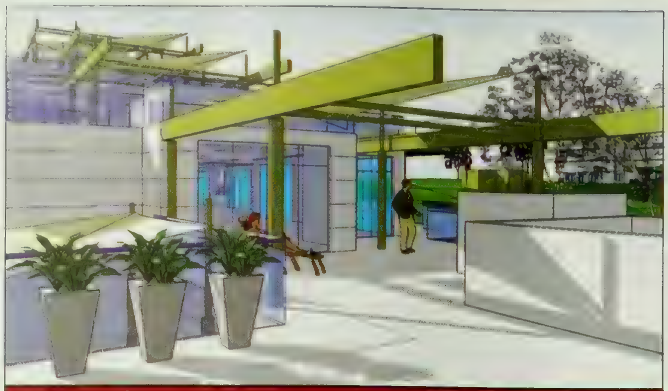

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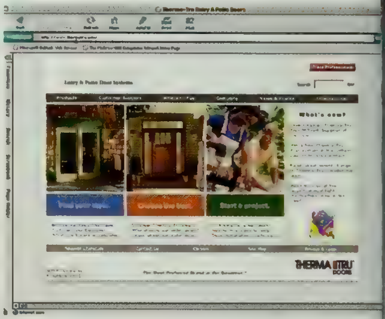
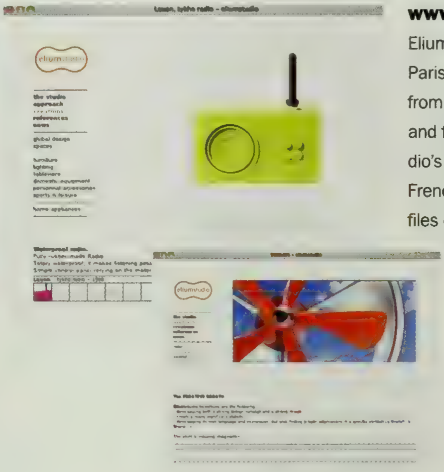
Product Resource: On the Web

www.thermatru.com

Therma-Tru Doors has redesigned its Web site to be more interactive, with customized navigation for consumers, builders, and architects. Visitors will see expanded content, easier navigation, a redesigned interface, an enhanced product catalog, and a more powerful search tool.



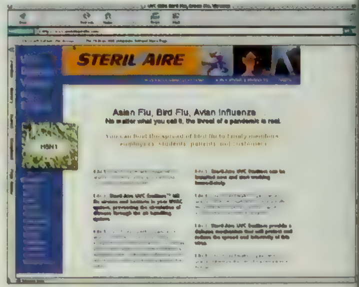


www.eliumstudio.com

Eliumstudio is a team of five, Paris-based product designers from the architecture, design, and fashion industries. The studio's easy-to-navigate site (in French and English) gives profiles on the team members as well as examples of the work in furniture, lightin tableware, domestic equipment, personal accessories, consumer electronics, home appliances, and more.

www.uvckillsbirdflu.com

A topical new Web site from Steril-Aire discusses how the company's ultraviolet-C (UVC) technology may be used preventively to control the spread of bird or avian flu in residences and buildings of all types. The site includes sections on frequently asked questions, applications, and products.



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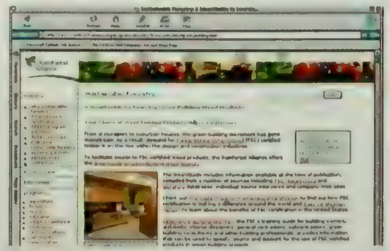
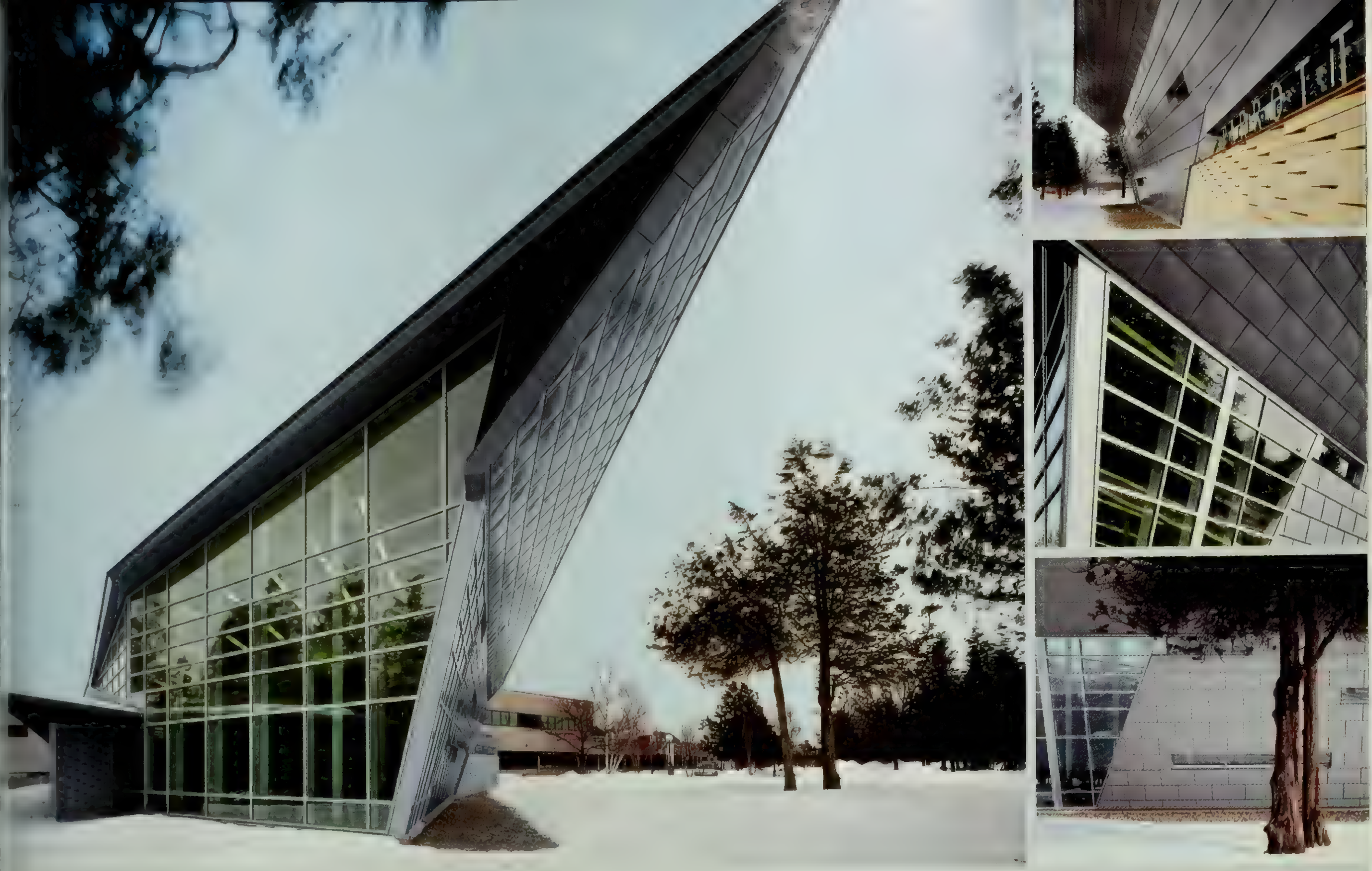
www.rainforest-alliance.org/greenbuilding

The Rainforest Alliance has compiled the *SmartGuide to Green Building Wood Sources*, a comprehensive listing of all Forest Stewardship Council–certified suppliers in North America, including contact, company, and product information. The *SmartGuide* can be downloaded for free at the Rainforest Alliance site listed above.





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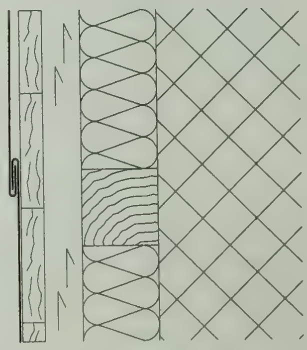

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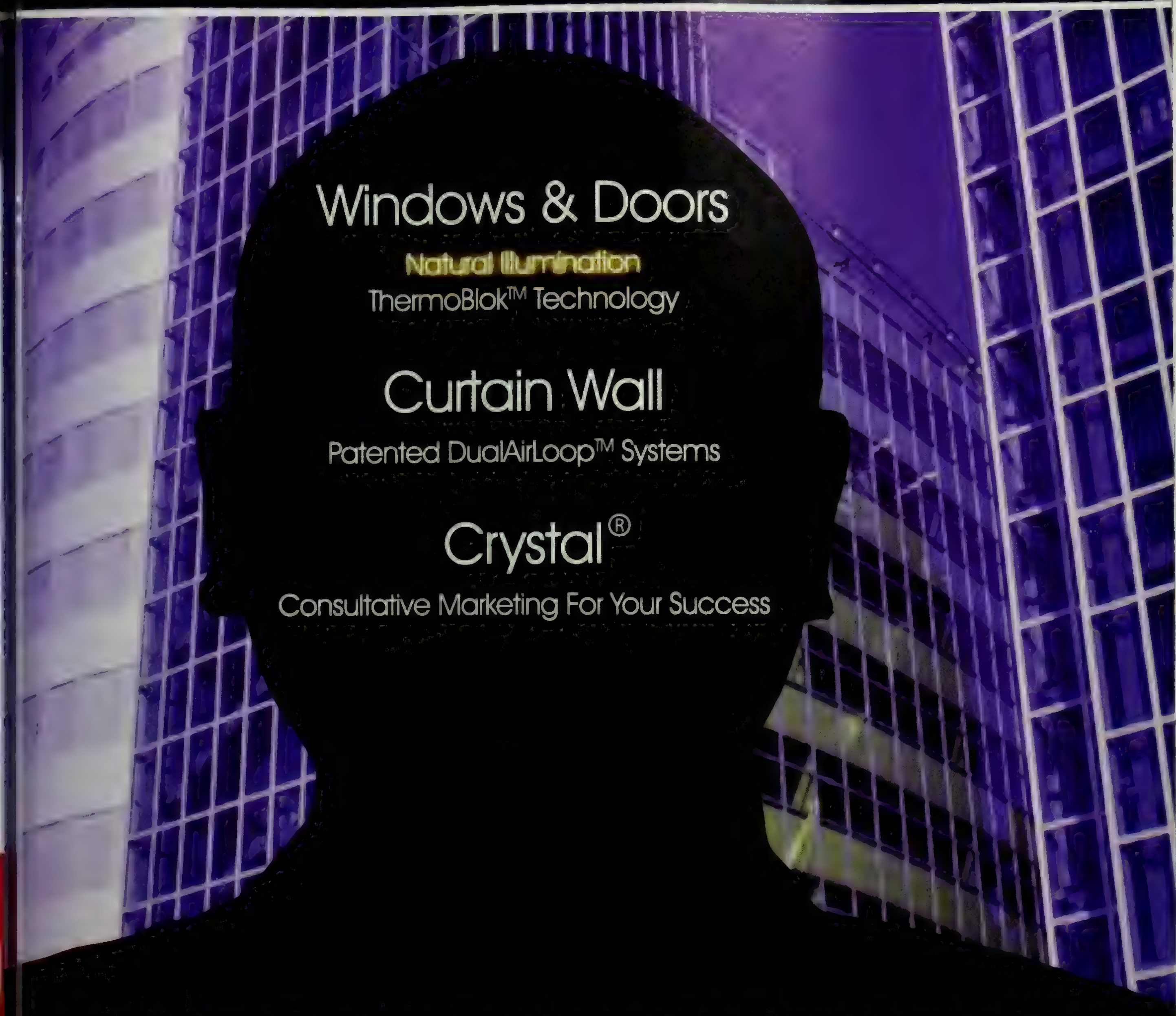

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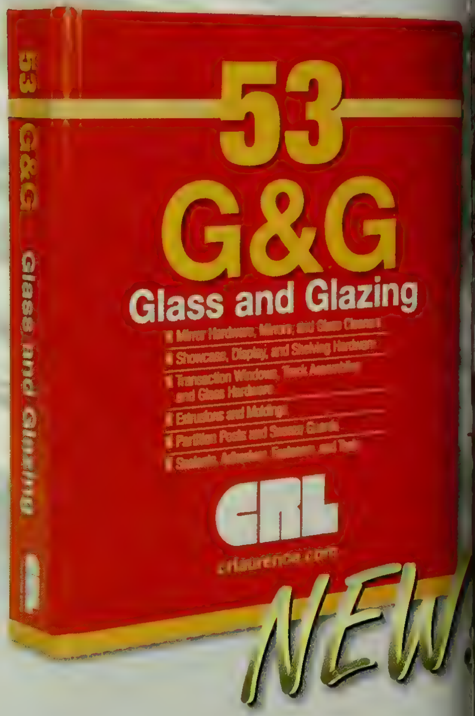

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The Connection Goes Live.

McGraw-Hill Construction's proven ability to connect the construction industry to vital information has just become a lot more powerful

By Roge

Norbert W. Young Jr., FAIA
President, McGraw-Hill Construction

> "The world has changed! The Network for products sets new standards for connecting people, projects and products."

Every industry has its trusted sources. For architects, contractors, and building product manufacturers, the industry-leading brands of McGraw-Hill Construction—Dodge, Sweets, *Architectural Record*, *ENR*, and our Regional Publications-have been the preferred connection to vital information for over a century. Sweets, for example, has defined professional standards for building product information since 1906, and is now taking a quantum leap forward as McGraw-Hill Construction harnesses the power of online technology and launches the McGraw-Hill Construction Network® for products.

"The world has changed," declares Norbert Young, president of McGraw-Hill Construction. "The new Network for products continues our evolution of transforming the global construction industry by setting new standards through connecting people, projects and products. Architects, contractors and building product manufacturers will find it's built for them, because they helped us build it, through months of interviews, surveys, and research."

The Network for products is built on the 100 year history and integrity of Sweets. Today, however, the Network for products goes far beyond what was provided in the past. It offers a new industry standard for researching, finding, comparing, specifying and purchasing building products, and collaborating with industry associates.

All told, the Network for products is like no other product resource available today. From the look and feel of the site to its ease of navigation and rich content in context, the Network for products was designed with your needs in mind.

A community thrives when everyone contributes to and gains from its group activities. For architects, contractors, and building product manufacturers, that
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> "Now it's easier than ever for architects to research products and evaluate them in an architectural context."

Architects are passionate about exp
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tion. However, they're cautious about
building products they choose to tran
visions into construction. They have t
Building products can make or break
projects, so you want the best option

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available. Here's where the Network for products will make a dramatic difference. "Architects are intellectually curious," observes Dora Chomiak, senior director, product development, for McGraw-Hill Construction. "The Network for products lets them research products their way, doing it faster, more easily, and more accurately." We've even incorporated *Architectural Record's* Building Types Studies to enhance the user's experience and allow greater depth of information and intelligence.

If you're a contractor, you may already use the McGraw-Hill Construction Network to find, bid, and win projects. "The McGraw-Hill Construction Network lets you work continuously on your project using the same platform where you located it," states Joseph Scott, marketing director, Contractors & Services channel, for McGraw-Hill Construction. "Yet continuity is just one of its benefits. Using its product search engine, you can quickly and easily identify options for the building products the architect is specifying, learn how they're installed and operated, and then get practical answers to that inevitable question: Where can I find suppliers to get this stuff to me?"

> "This represents an unparalleled way for industry players to connect to one another and to projects and products in a whole new way."

Building product manufacturers will benefit by reaching a robust audience of end users with the deeper, richer content they need to make product decisions. Better yet, you'll monitor all requests for your product information in real time using a new Performance Dashboard created expressly for you. Per Lofving, senior director, product development, for McGraw-Hill Construction, points out, "If you've been looking for a cost-effective way to deliver information about your products directly to architects with projects that could use your products, and maintain communications with them to make sure you win the order, you've got it now."

The power of this new offering is its integration with our McGraw-Hill Construction Network. One powerful, industry portal enables you to find, research, compare, specify, and purchase building products, collaborate with the people who make, specify, and use building products, and identify the projects they are supplying, designing, and constructing - faster, better, and smarter. In short, the power is in the connections this new offering provides.

The portal is open, and everyone is invited. Extending a warm invitation to the construction industry to put this powerful new tool to work, McGraw-Hill Construction's Norbert Young says, "Check out our new Network for products by going to:

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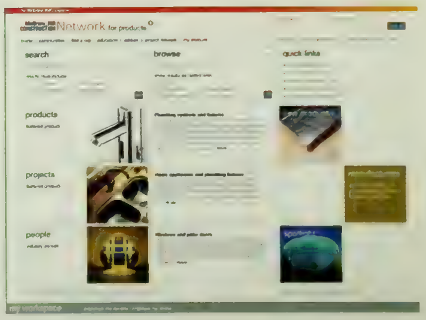

Roger Yee is an architect and writer living in New York

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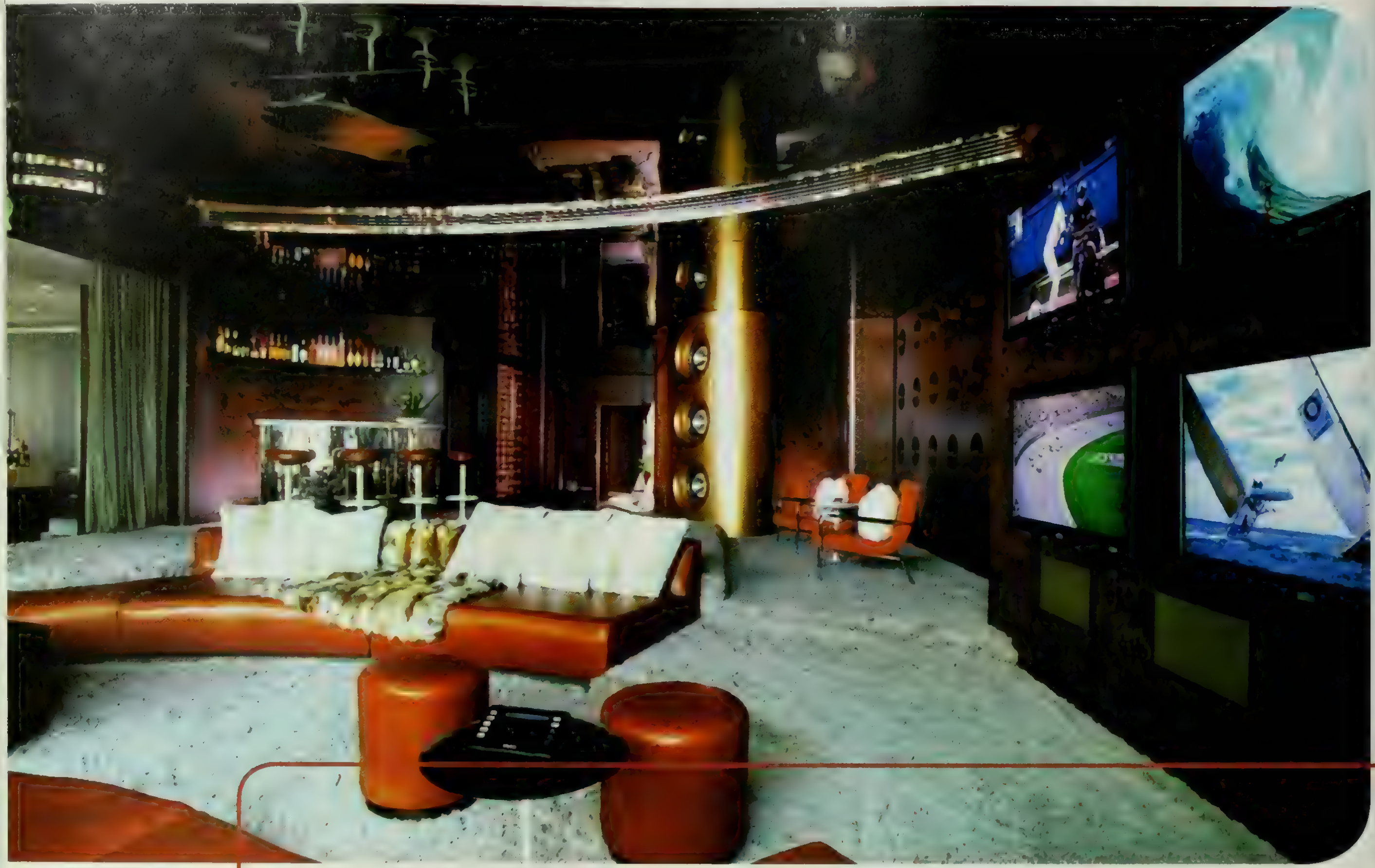

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ew & Upcoming
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d the Metropolis
ashington, D.C.
ril 1–July 30, 2006
s exhibition offers highlights from
recently acquired archives of
ius Shulman, the internationally
nowned photographer whose
nic images helped to define
dern architecture. His photo-
aphs, such as those of Richard
utra's Kaufmann House in Palm
rings (1947) and Pierre Koenig's
se Study House #22 in the
llywood Hills (1960), transcend
ere documentation of steel and
ss. They reveal the essence of
architects' visions and capture
spirit of the eras when the
uctures were conceived. At the
tional Building Museum. Call
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tween Form and
rcumstance: Re-Thinking
e Contemporary Landscape
mbridge, Mass.
ril 3–May 24, 2006
exhibition of the recent practice
Michael Van Valkenburgh
sociates. At Harvard University
aduate School of Design. Visit
vw.gsd.harvard.edu.

ecret Cities: Extraordinary
ban Photography
icago
ril 14–June 17, 2006
e contemporary photographers
this exhibition are poets of light
d shadow unlike many architec-
ral photographers. Included in
e show are works by Christophe
lsecchi, John Kimmich-Javier,
rris Lee Harris, Alex Fradkin, Jay
ng, Tony May, and Madeline
ering. At ArchiTech. For more
formation, call 312/475-1290 or
it www.architechgallery.com.

Vaults of Heaven: Sanctuaries of Byzantium
New York City
April 26–July 28, 2006
An exhibition of 30 large-format color photographs of some of the greatest examples of Byzantine architecture. Captured by the renowned Turkish photographer and architect Ahmet Ertug, the striking images reveal in astonishing detail the extraordinary churches and sanctuaries of ancient Byzantium. At the World Monuments Fund Gallery. For additional information, call 646/424-9594 or visit www.wmf.org.

Ongoing Exhibitions

On-Site: New Architecture in Spain
New York City
Through May 1, 2006
Featuring 53 noteworthy architectural projects, this exhibition focuses on the most recent architectural developments in a country that has become known in recent years as an important center of international design experimentation and excellence. At the Museum of Modern Art. Call 212/708-9431 or visit www.moma.org.

Prairie Skyscraper: Frank Lloyd Wright's Price Tower
New Haven
Through May 5, 2006
Marking the 50th anniversary of the completion of the celebrated landmark Price Tower, the Price Tower Arts Center has mounted this exhibition comprising documents, drawings, furniture, building components, and other artifacts that bear witness to the genius of its architect. At the Yale School of Architecture. For information, call 203.432.2288 or visit www.architecture.yale.edu.

Symmetry
Los Angeles
Through May 7, 2006
In the world of space and time, symmetry derives its meaning from a center, a repetition of forms on mirroring sides of an axis. This exhibition features works by Los Angeles-based contemporary artists that use or relate to this concept. At the MAK Center for Art & Architecture L.A., at the Schindler House. Call 323/651-1510 or visit www.makcenter.org.

Open: New Designs for Public Space
Chicago
Through May 7, 2006
The Chicago Architecture Foundation investigates the evolving conditions of public space in Chicago—from the spectacular Millennium Park to the development of streets and gardens in city neighborhoods—with more than 300 architectural renderings, photographs, and models. At the ArchiCenter. Call 312/922-3432 visit www.architecture.org.

Hiroshi Sugimoto
Washington, D.C.
Through May 14, 2006
The first career survey of one of Japan's most important contemporary artists. Sugimoto is known for his starkly minimal images of architecture, seascapes, and movie theaters, as well as his richly detailed photographs of natural history dioramas, wax portraits, and Buddhist sculptures. At the Smithsonian Hirshhorn Museum and Sculpture Garden. For more information, call 202/633-1000 or visit www.hirshhorn.si.edu.

Southpoint: From Ruin to Rejuvenation—ENYA International Ideas Competition Exhibition
New York City
Through June 17, 2006
The Emerging New York Architects (ENYA) Committee presents an exhibition of the second biennial international ideas competition. The exhibition features 77 visions for a Universal Arts Center at Southpoint Park on Roosevelt Island. ENYA Prize recipient, second place, third place, student prize, and historic preservation award, along with 42 selected entries, are included in the accompanying catalog. At the Center for Architecture. For more information, call 212/683-0023 or visit www.aiany.org.

Morphosis
Paris
Through July 17, 2006
Sixteen projects (layouts, drawings, photographs, etc.) from the Morphosis agency, currently involved in the construction of numerous buildings, are on view to convey the idea of architecture as "in the act." Screens and Webcams will open windows onto buildings in operation or building sites underway in order to follow their evolution. At the Centre Pompidou. Visit www.cnac-gp.fr/pompidou.

Lectures, Conferences, and Symposia

Harvard Graduate School of Design Lecture Program
Cambridge, Mass.
The Graduate School of Design's (GSD) lecture program presents internationally prominent speakers in the design fields. They are invited to share their work and ideas with the GSD community, thus providing insight into contemporary professional practice and scholarship. Speakers include Ricky Burdett, Luis M. Mansilla, Holly Gretch Clarke, Jan Kaplicky, Bjarke Ingels, Jean Nouvel, Jorge Silvetti, Terence Riley, Nathalie de Vries, Julie Snow, Katrin Scholz-

Barth. At Piper Auditorium. For additional information, visit www.gsd.harvard.edu.

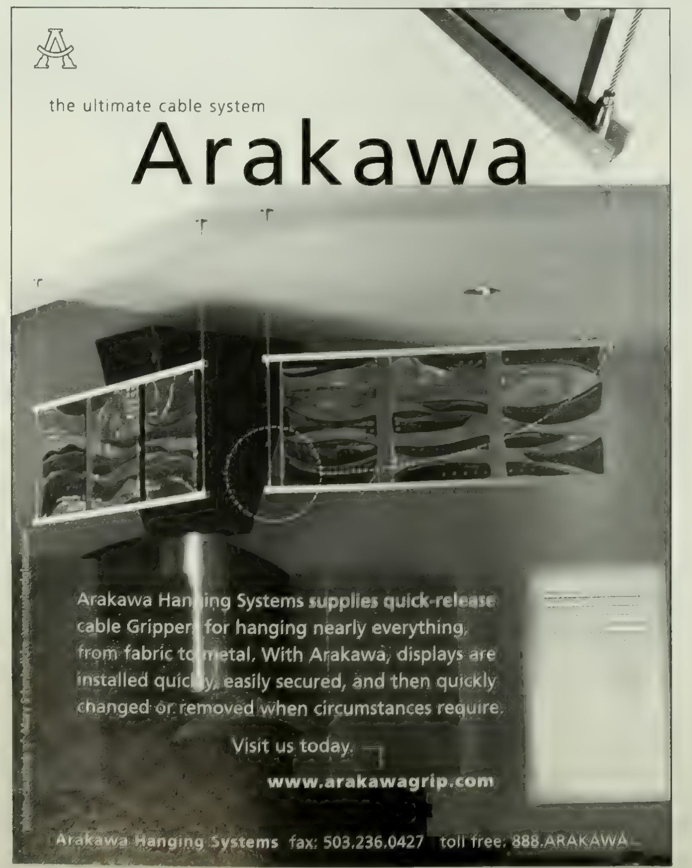
Spotlight on Design: Emerging Voices: dECOi/George Yu Architects Washington, D.C.
April 5, 2006
Mark Goulthorpe, founding principal of dECOi in Paris, France, and Cambridge, Massachusetts, will present his firm's work, ranging from pure design to architecture and urbanism. Los Angeles-based George Yu will discuss, among other projects, the creative workspaces of the Sony Design Centers in Los Angeles and Shanghai. Both architects were selected as "emerging voices" by the Architectural League in New York. At the National Building Museum. To learn more, call 202/272-2448 or visit www.nbm.org.

Symposium: Women in Architecture: Three Tracks to Success Washington, D.C.
April 6, 2006
According to the American Institute of Architects (AIA), women comprise only 12 percent of AIA members but over 40 percent of students now enrolled in architecture schools. Three successful principals of women-owned architecture practices—Suman Sorg, FAIA, principal of Washington, D.C.–based Sorg Associates; Joan Goody, FAIA, principal of Boston-based Goody, Clancy & Associates; and Carol Ross Barney, FAIA, principal with Chicago-based Ross Barney + Jankowski—will discuss their careers in a profession where the number of women is on the rise. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Alexander Garvin, Edward Uhlir, Charles Renfro Chicago
April 6, 2006
From Chicago's own Millennium Park to master plans for the Olympic Games, new projects are redefining how we approach public space. Three designers and organizers of event and public spaces come together at the Chicago Architecture Foundation (CAF) for a dialogue on the future of public space. Panelists include Alexander Garvin, Alex Garvin & Associates, New York; Edward Uhlir, project director, Millennium Park, Chicago; and Charles Renfro, Diller Scofidio + Renfro, New York. With moderator Ned Cramer, curator, CAF. At the John Buck Company Lecture Hall Gallery. Call 312/922-3432 or visit www.architecture.org.

Sustainable Design Seminar: Sustainable Strategies/Rating Systems Long Island City, N.Y.
April 8, 2006
In this one-day course, students will learn how sustainable materials and renewable energy strategies are integrated into the building design process. Instructors will also review current green building rating systems. The course is led by ARUP consultant Shruti Narayan and Jamy Bacchus, both of whom are LEED-accredited engineers and sustainability consultants. Learn the feasibility and applicability of the current green building rating systems, including LEED, LABs 21, and Greenglobes. At NYDESIGN Design Business Center. Visit www.nydesigns.org.

3X3
New York City
April 17, 2006
A monthly lecture series that brings together Chinese and internationally recognized scholars, artists, and architects to present research and projects focusing on the development of today's China. The series creates a perspective and background, through analyzing the impact of the country's past, pres-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ent and future. At the Center for Architecture. Visit www.aiany.org or www.peoplesarchitecture.org.

Spotlight on Design: Rem Koolhaas
Washington, D.C.
April 28, 2006
The architecture of Rem Koolhaas is recognized worldwide for combining technology, function, and design in groundbreaking ways. In his first lecture in Washington since 1996, the founding principal of the Rotterdam-based architecture firm Office of Metropolitan Architecture (OMA) will discuss his recent and current projects—including store designs for Prada, the Seattle Public Library, the McCormick Tribune Campus Center at the Illinois Institute of Technology, and the CCTV Television Station and Headquarters in Beijing—and share his views on the current state of architecture. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

The Architecture of Sustainability
Shepherdstown, W.Va.
May 4–7, 2006
With renewed interest in the environment, many questions arise as to what extent architecture plays a role in green design. This three-day conference will consider the impact of sustainability on architectural design from several perspectives. Speakers will include Jeanne Gang of Studio Gang, James Timberlake, FAIA, of Kieran Timberlake, Andrew Whalley of Grimshaw, and others. Also, the winners of the Design Ideas Competition, "House for an Ecologist," will be on view. At the National Conservation Training Center (NCTC). For more information, visit www.aia.org/cod.

Competitions

AIA New York Chapter Design Awards 2006
Entry Deadline: April 14, 2006
Submission Deadline: May 5, 2006
The Design Awards Program seeks to recognize and promote design excellence in three categories: Architecture, Interior Architecture, and Projects. Visit www.aiany.org/designawards.

The SOM Prize
Deadline: April 28, 2006
Since 1981, the Skidmore, Owings & Merrill Foundation has helped young architects and engineers broaden their education through travel fellowships awarded annually. The $50,000 grant will be awarded to the most promising student in architecture, urban design, and design, as selected by an independent jury of prominent professionals. Graduating undergraduate and graduate students of accredited U.S. schools of architecture, urban planning, and design are eligible. Visit www.somfoundation.som.com.

Request for Expressions of Interest
Deadline: May 1, 2006
The Anacostia Waterfront Corporation (AWC) issued a Request for Expressions of Interest (RFEI) for the redevelopment of 47 acres of publicly owned land along the Southwest Waterfront that is slated to be transferred to AWC. The RFEI is an open invitation to qualified local, national, and international developers with experience in large-scale, mixed-use, retail, residential, and public/private development who are interested in redeveloping the site. For more information, visit www.swwaterfrontdc.com.

International Student Design Competition: Concrete Thinking for a Sustainable World
Deadline: May 3, 2006
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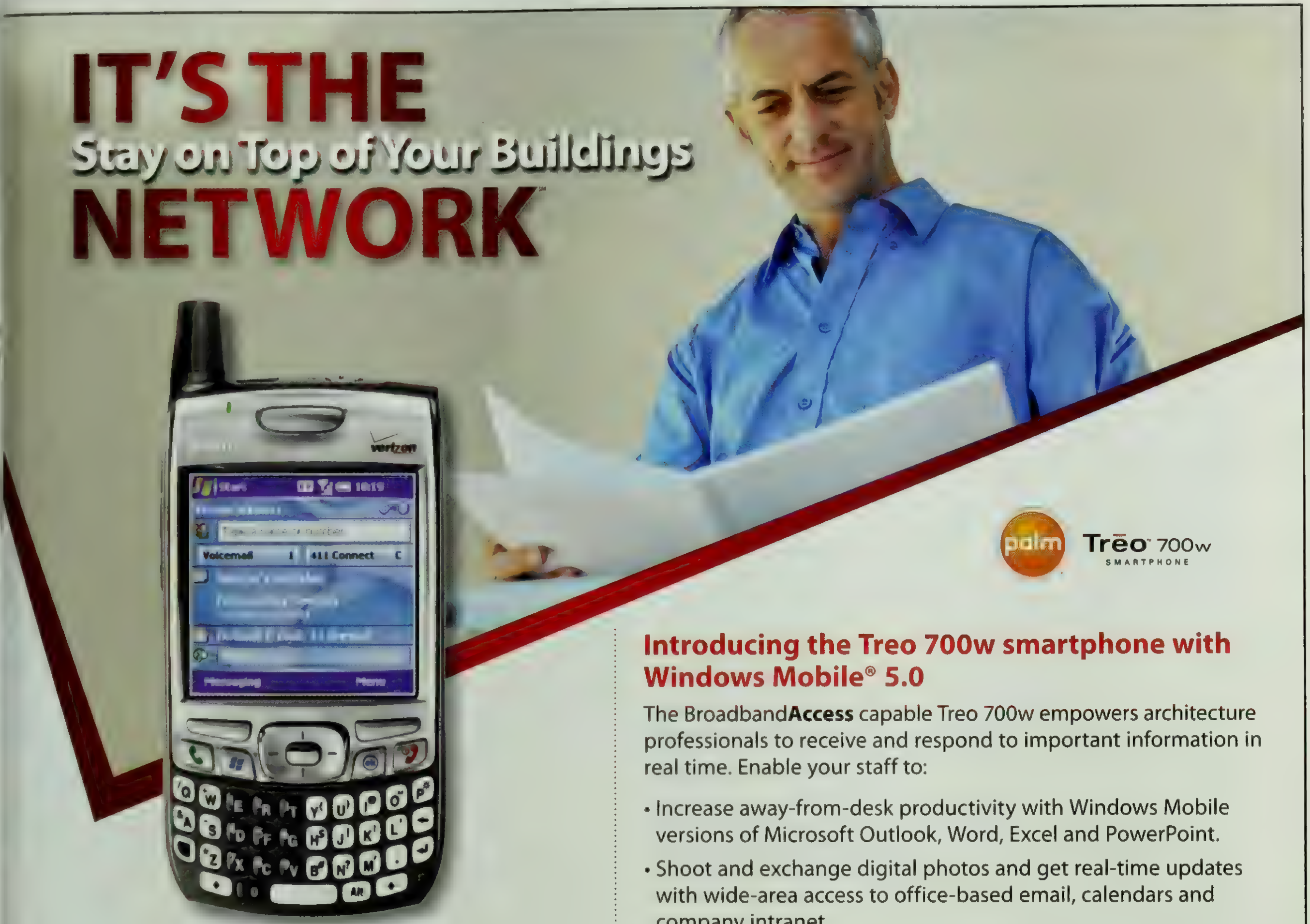

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Dates & Events

Association (PCA) and administered by the Association of Collegiate Schools of Architecture (ACSA), students will be challenged to investigate an innovative application of portland-cement-based materials to achieve sustainable design objectives. The competition is open to all ACSA-affiliated schools. Visit www.acsa-arch.org.

2006 Benjamin Moore HUE Awards

Deadline: May 19, 2006

Presented by the Benjamin Moore company to honor architects and interior designers for exemplary use of color in both residential and contract projects, the awards recognize design professionals who incorporate color in innovative and imaginative ways—through the use of interior and exterior paints, building materials, textiles, and other surfaces, plus design elements and furnishings. Call 212/966-3759, x 233 or visit www.benjaminmoore.com.

Rafael Viñoly 2006 Research Fellowship

Deadline for Grant Proposals: June 1, 2006

Rafael Viñoly Architects is again offering fellowships to support original research that advances the craft and practice of architecture and can benefit from being carried out in the environment of an architectural office. Potential areas of research may include design methodologies, construction technologies, design representation and fabrication, materials technology, and sustainable design, or other topics. In addition to a stipend and research expenses of up to $60,000, Rafael Viñoly Architects will provide work space and support. Fellows are to be resident for terms of three to twelve months, between September 2006 and September 2007. For more information, visit www.rvatr.com.

Seattle Architecture Foundation Ideas in Form9 Architectural Model Exhibit Seattle

June 9–July 8, 2006

Deadline for Entries: May 5, 2006

Seattle Architecture Foundation (SAF) uses its annual Ideas in Form architectural-model exhibition to educate the general public about the creative process. The show features 80 to 100 projects still on the boards, under construction and recently completed by Northwest architects or architects designing projects in the Northwest. This year's exhibition will be open daily June 9 through July 8 in the Rainier Square Atrium in Downtown Seattle, 1333 5th Avenue, First Level. Call 206/667-9184 or visit www.seattlearchitecture.org.

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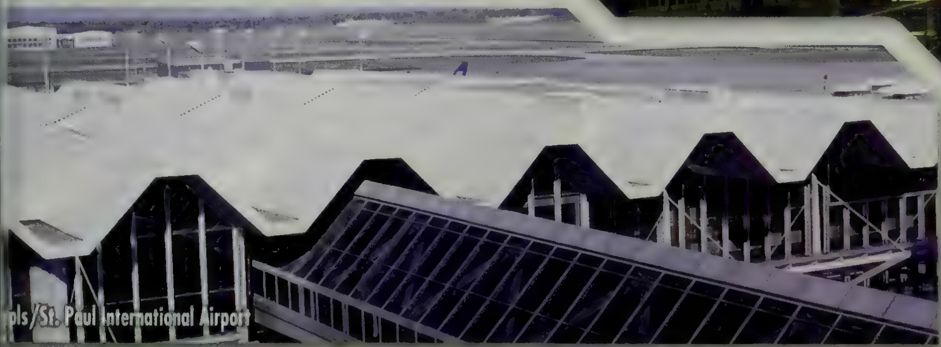

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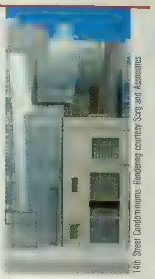
14th Street Condominiums: Rendering courtesy Sorg and Associates

Symposium
April 6
Women in Architecture: Three Tracks to Success
Suman Sorg, FAIA; Joan Goody, FAIA; and Carol Ross Barney, FAIA

Spotlight on Design
April 3
The SWA Group
Kevin Shanley, ASLA, president of SWA Group
April 26
Steve Martino, FASLA, landscape architect
April 28
Rem Koolhaas, architect

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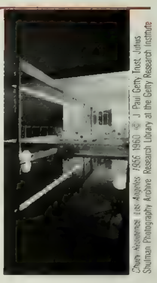
exhibitions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Julius Shulman, Modernity and the Metropolis
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Dates & Events

Campus Planning
Deadline: June 9, 2006
New England architects and planners are invited to submit college and university projects completed throughout the world, and architects and planners throughout the world are invited to submit New England projects. For more information, visit www.architects.org/awards.

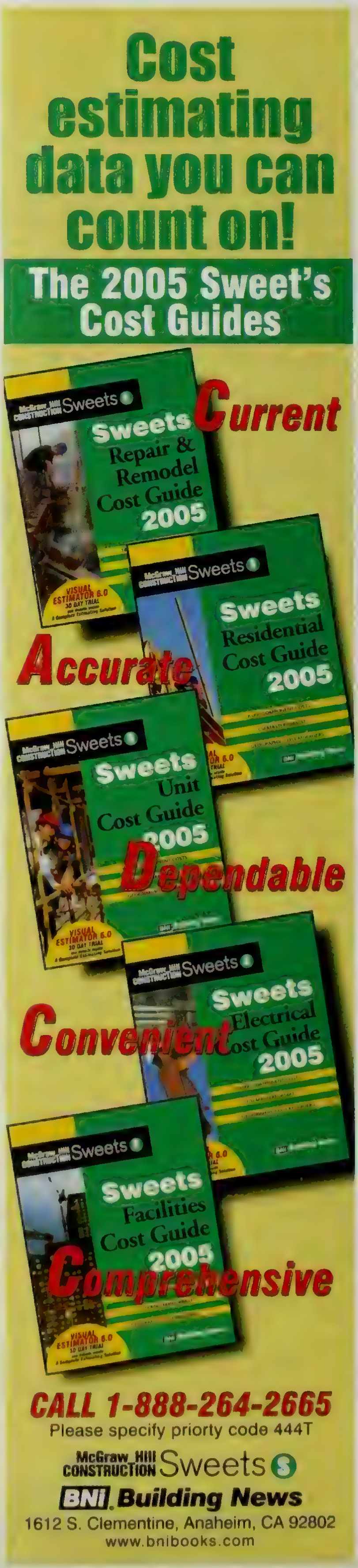
Unbuilt Architecture
Deadline: June 26, 2006
Architects, architectural educators, and architecture students throughout the world are invited to submit real or theoretical projects. Visit www.architects.org/awards.

The 2006 VIP Awards
Deadline: July 1, 2006
Since 2000, Vetter Windows & Doors has recognized projects that preserve and respect the time-honored tradition of quality custom building and master craftsmanship through the Vetter Inspired Project Awards (VIP). The VIP Awards is a national design competition open to any architect, custom builder, or remodeler in the United States that has used Vetter products. Call 800/838-8372 or visit www.vetterwindows.com.

Honor Awards for Design Excellence
Deadline: July 6, 2006
The annual Boston Society of Architects (BSA) honor awards program invites submissions of projects of any type anywhere in the world designed by Massachusetts architects and also invites architects throughout the world to submit projects built in Massachusetts. For more information, visit www.architects.org/awards.

Juried Photo Exhibits at Build Boston
Deadline: August 1, 2006
All New England architects, landscape architects, and interior designers who are members of the AIA, ASID, ASLA, or IIDA are eligible. For more information, visit www.architects.org/awards.

E-mail event and competition information two months before event or submission deadline to elisabeth_broome@mcgraw-hill.com.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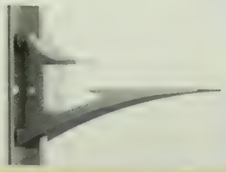

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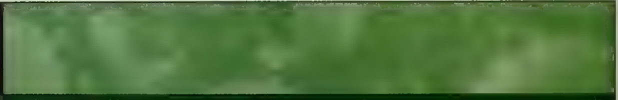

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4.	a	b	c	d	e	**9.**	a	b	c	d	e
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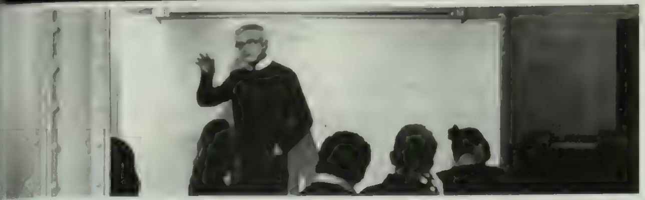

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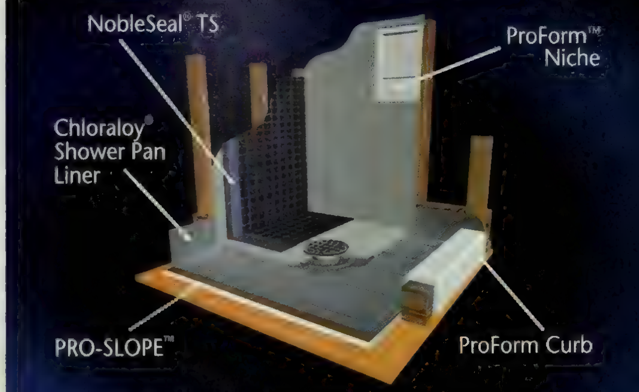

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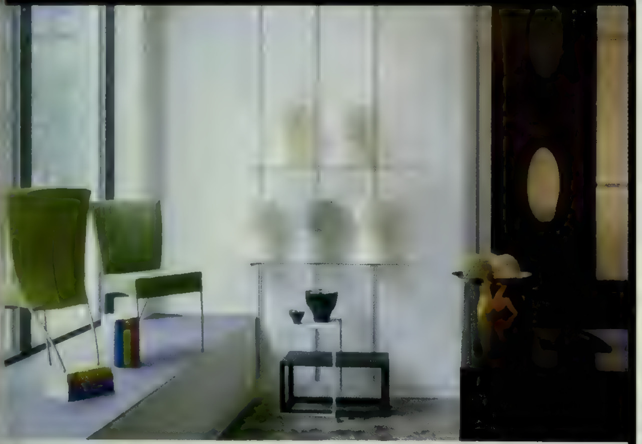

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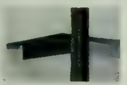

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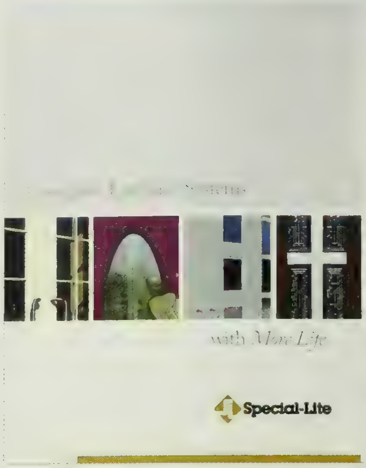

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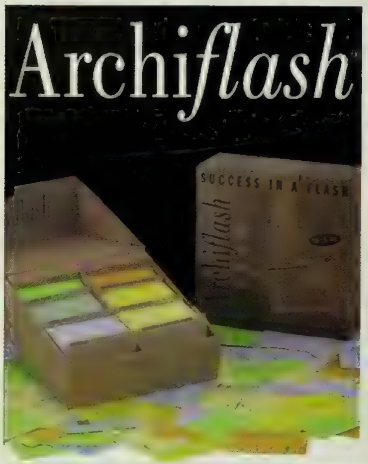

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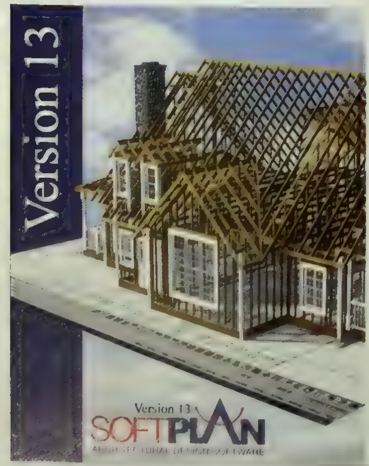

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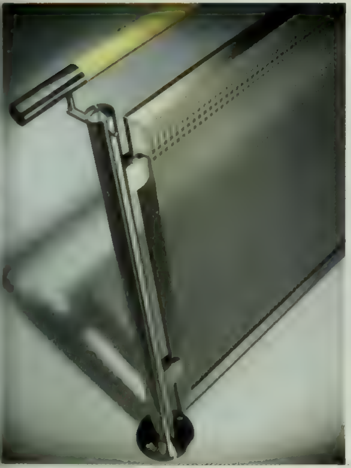

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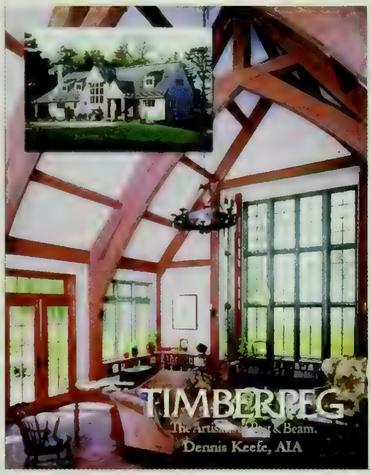

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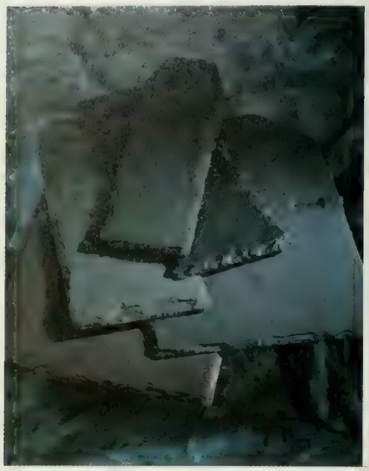

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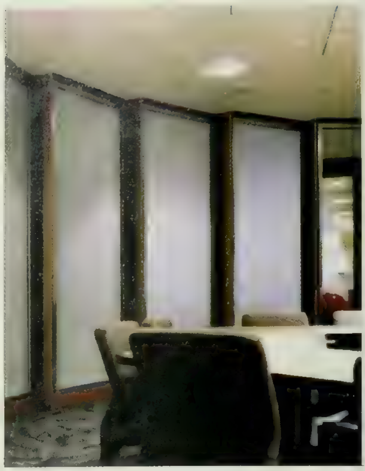

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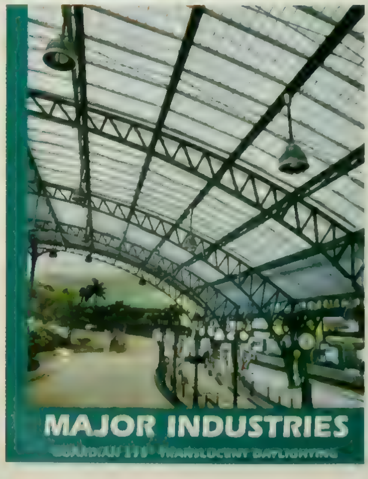

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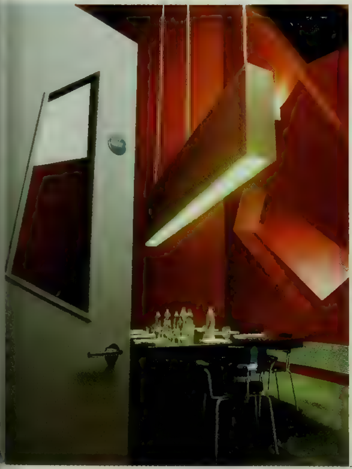


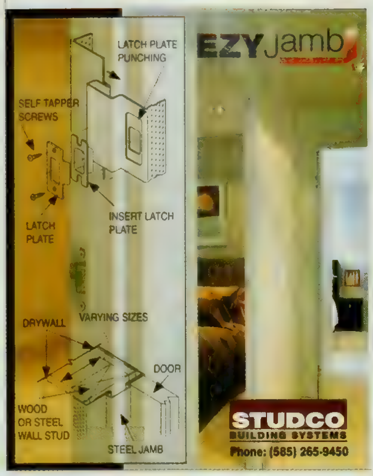
Pilkington Pyrostop™ is available with many options including opaque films, colored interlayers, surface designs and lightly sandblasted. Pilkington Pyrostop™ can also be combined with any of the Pilkington products to meet your design needs. For more information contact Technical Glass Products or see www.pilkington.com/fire or www.fireglass.com.

800-426-0279
www.fireglass.com

| Circle Reader Service #170

Trimless Doorframe

Studco Building Systems



Studco's EZY-Jamb product is a split-type jamb manufactured from cold rolled steel to produce a strong and secure assembly. EZY-Jamb comes with perforated sides for flush jointing which produces a contemporary flush finish door jamb with clean lines and inconspicuous detail. The jamb comes in two sections that fit neatly together and provides adjustability in wall thickness. Not only has the installer's dream been realized, but the architect's dream has started.

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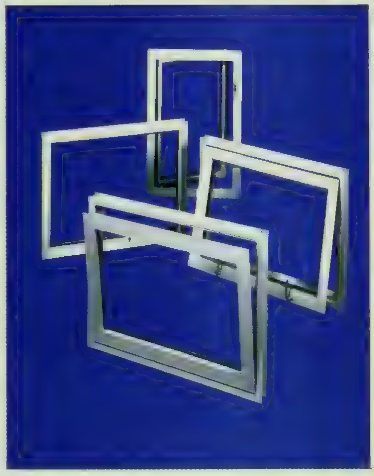
Door & Window Systems



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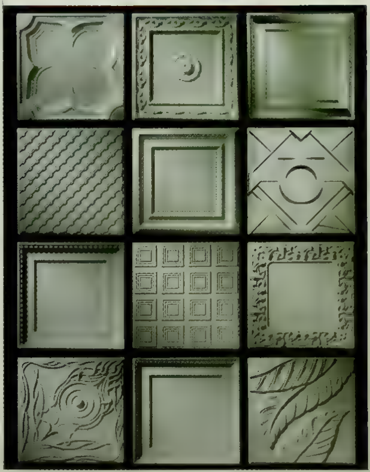
Ornamental Plaster Ceiling Tiles

Above View Mfg., By Tiles, Inc.



Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

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Binvetec

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Crane Composites/Kemlite Company

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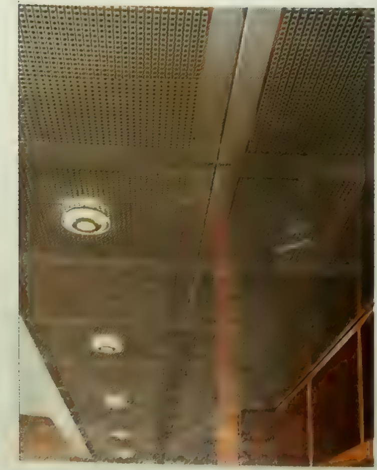

The Gage Corporation International has been designing and manufacturing decorative metal ceilings since 1989. Gage ceilings feature more than 50% post-consumer recycled material and are visually rich, functional, and versatile as a design medium. Custom collaboration is encouraged. Email gage@centruytel.net

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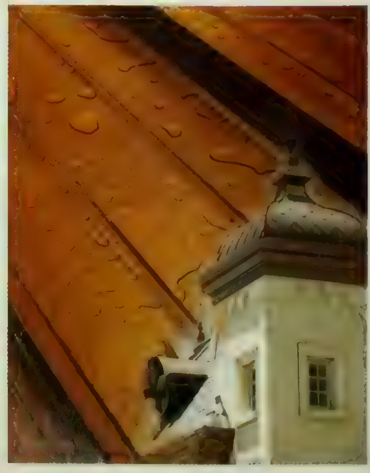

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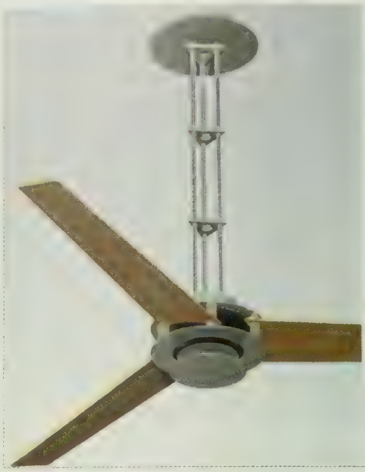

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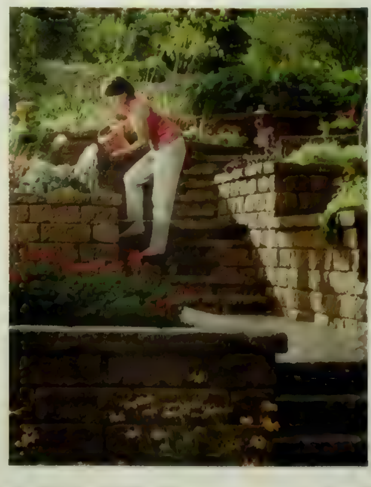

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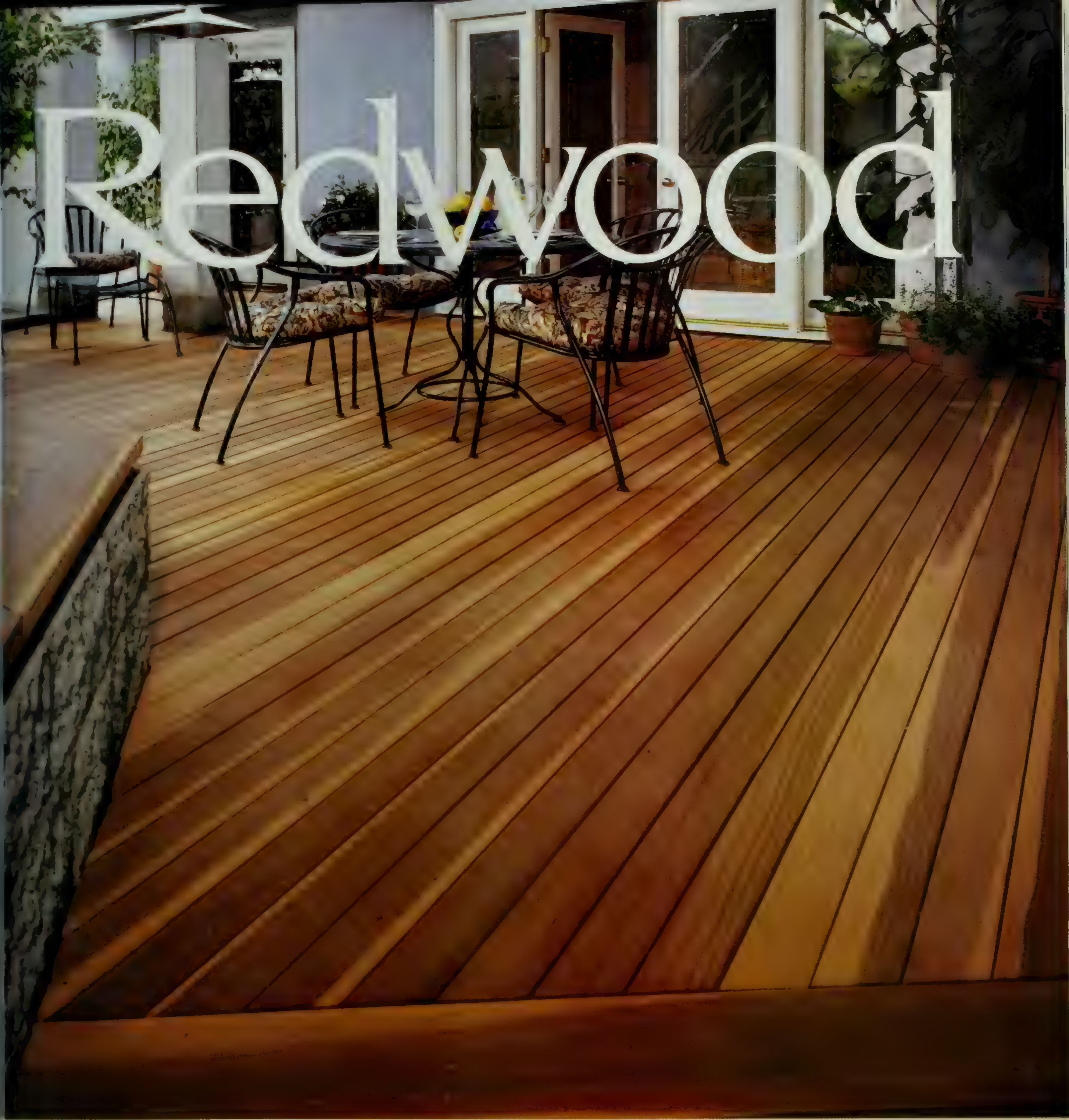

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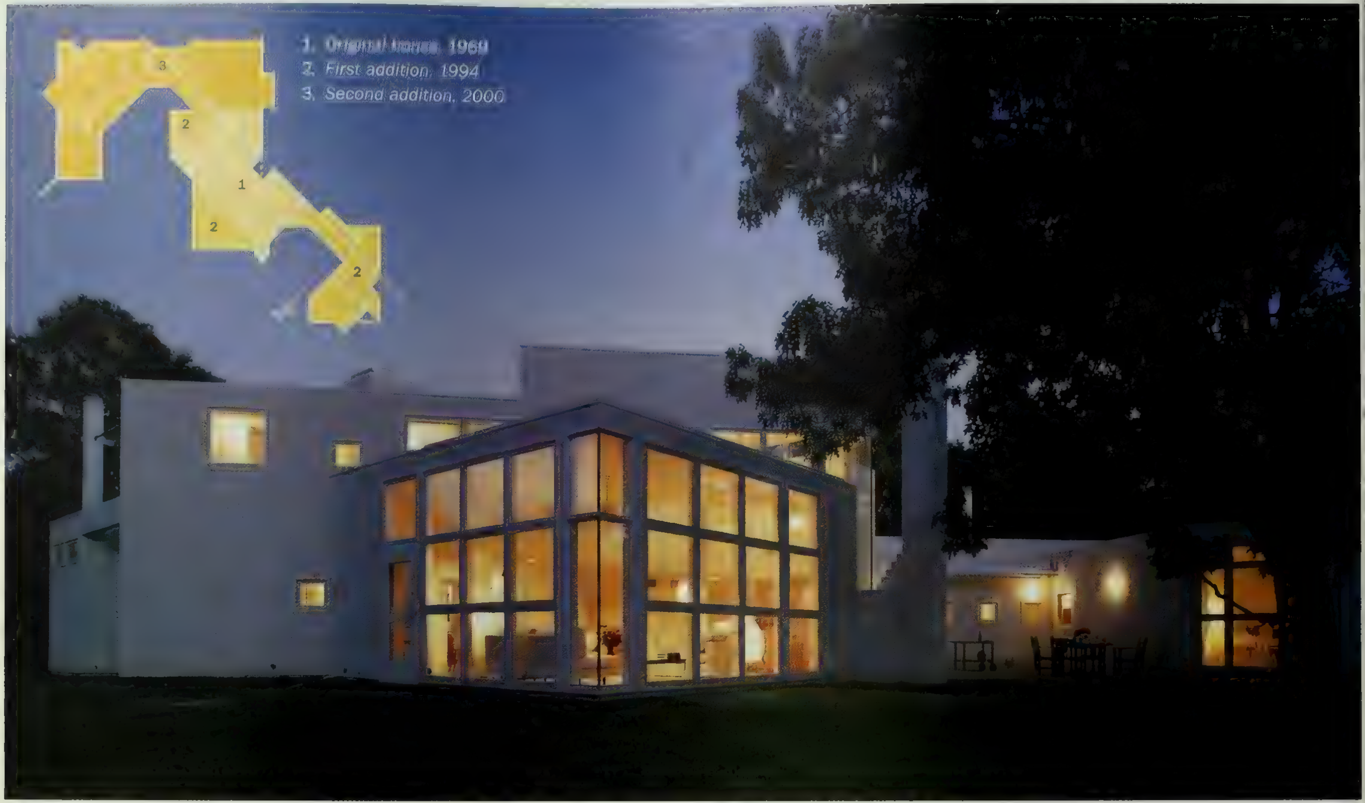

My, how you've grown

Richard Meier's Hoffman House, in East Hampton, New York, published in ARCHITECTURAL RECORD in May 1969 (below), has undergone two additions by Stamberg Aferiat Architecture. Two new wings extend west and east (plan, above) and the living space was expanded on the northern side (above).

Adding to a Richard Meier House may have been too daunting for most firms, but not Stamberg Aferiat, a firm that has also expanded houses designed by Charles Gwathmey and Hugh Hardy. When Meier, too busy for the project, personally recommended Paul Aferiat, who had worked for him in the 1970s, and his partner Peter Stamberg, the architects were eager for the challenge.

Anita Hoffman, the original client for the 2,000-square-foot East Hampton home, which ARCHITECTURAL RECORD published in 1969, found, after a quarter century living in the house, that the tight geometry was too constraining to house guests. Hoffman wanted a summer retreat for her visiting children, now married with children of their own. So the architects added a bedroom suite for her in 1994, extending the house to the west, and turned three small bedrooms into two larger ones, bringing the total area of the residence to 3,000 square feet. But after the project was completed and the family began flocking to it, Hoffman found it necessary to request another expansion in 2000. Stamberg Aferiat then added 2,000 square feet of space, building an eastern wing with three bedrooms, and expanding the combined kitchen and family room.

For both additions, the architects kept Meier's intentions in mind. "This house was about that very tight, strict geometry and the idea of a pair of rectangles rotated on one another," explains Aferiat. "It was a closed system" that required one type of architectural language, whereas for additions to other houses, the firm tends to create collages. To establish a hierarchy, the architects kept the rooflines of the added wings lower than those of the original house. Meier gave the project a tremendous compliment, claiming that in many ways, "the project is more successful because of the way that it is anchored to the site now." *Sarah Cox*

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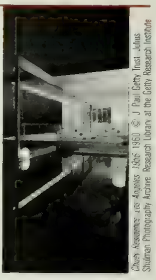
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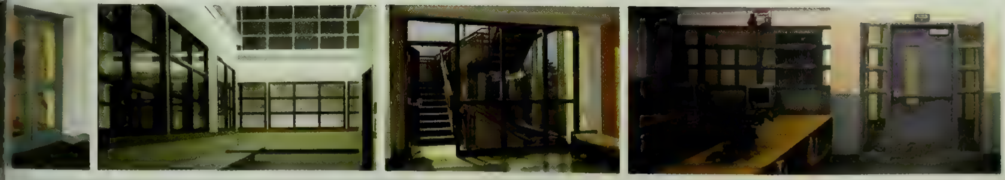

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From the publisher

Dear Reader,

K-12 school construction is currently undergoing a boom that has not been seen for quite a few years; in fact, it is expected to increase in 2006 and 2007. This provides an appropriate time for us to visit and revisit schools that are setting the standards for this type of construction. We can help empower the decision-makers who are in the midst of designing or building schools. We hope that you will enjoy reading about the successes in this industry.

You are among the 30,000 architects, owners, and contractors who are working on these projects selected to receive this special supplement, ARCHITECTURAL RECORD REVIEW SCHOOLS. *It has three parts. First, we've included a special article on the opportunities for schools to impact entire communities. We were quite encouraged by the ways schools tend to bring people of all ages together. And, by listening to* ARCHITECTURAL RECORD*'s network of professionals and tapping into the rich construction market data provided by McGraw-Hill Construction Research and Analytics, we show you what to expect in the future.*

Second, we're reprising Building Types Study articles, covering three innovative school projects written about in ARCHITECTURAL RECORD *in 2003, and we've supplemented them with new post-occupancy reports created by interviewing the schools' architects, principals, teachers, and students.*

Third, we're showcasing products used in the construction of K-12 school buildings that are of exemplary quality. Knowing what is available helps architects make better decisions in school construction, and we have discovered some great options by following this market closely.

We are proud of this supplement, ARCHITECTURAL RECORD REVIEW SCHOOLS, *and we are sincere in our hopes that you will find it valuable too.*

Laura Viscusi
VP/Associate Publisher, ARCHITECTURAL RECORD

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No School Is an Island

WHILE A NUMBER OF FACTORS CAN MAKE HIGH QUALITY SCHOOL CONSTRUCTION DIFFICULT, THE LONG-TERM INVESTMENT IN THE COMMUNITY BENEFITS MORE THAN JUST THE STUDENTS. THE AAF IS ENCOURAGING A COLLABORATIVE APPROACH TO THE INCREASE IN CONSTRUCTION.

By Jayne Merkel

The days when the postwar baby boom forced communities to build schools with cheap, experimental new materials on any lot that was available, often off the beaten track and paved over with asphalt, may be coming to an end. Community leaders are beginning to realize that a distinguished school can be a boon to everyone in the neighborhood, the way the Waverly School and the Camino Nuevo Middle School have been. On the depressed east side of St. Paul, the John A. Johnson Achievement Plus Elementary School was renovated by Ankeny Kell Architects and expanded to include medical offices, a family center, counseling space, and a YMCA with a swimming pool, day care center, teen center, preschool, an aerobics studio, and cardio and strength-training equipment. It has made a tremendous impact on the area.

It isn't easy to create schools of this kind. The criteria and standards that most school boards adhere to were written many years ago, and for suburban situations. Also, politicians and school officials are under pressure from taxpayers today to spend as little as possible on schools.

Hoping to enable them to build the best schools they can despite these constraints, the American Architectural Foundation (AAF), the nonprofit affiliate of the American Institute of Architects (AIA), has been concentrating its research and outreach efforts on school design. "When you build a school, you only get one shot at it. If you don't do it right, you might not get another chance for 30 years," AAF president and CEO Ron Bogle pointed out. Today, $30 billion a year is being spent on schools. "It's a historically unprecedented time."

In McGraw-Hill Construction's Fourth Quarter 2005 *Construction Market Forecasting Service* (released in February 2006), Richard Branch wrote an article entitled "Education Construction Sees Mild Recovery in 2005" which points that K–12 school construction is beginning to rebound "after several down years. The growth rates for education construction will strengthen in 2006 and 2007, and starts will reach 245 million square feet by 2007…[and] remain at a high level through 2010, but are expected to decline slightly as the economy softens and the demographic push eases a bit at the lower levels of education."

To make the most of this relatively narrow window of time, the

The John A. Johnson Achievement Plus Elementary School, in St. Paul, serves 320 children from kindergarten to sixth grade and another 100 in an early childhood program. The 75,000-square-foot school, renovated by Ankeny Kell Architects and reopened in 2000, adjoins a new 63,000-square-foot YMCA that serves 3,000 students and community members. In the renovation, the school's old gymnasium became the new cafeteria, while the old auditorium became a library and classrooms. The new YMCA now serves as the school's gym and provides space for after-school activities. The total cost to build the complex was $29.5 million, including $6.8 million for the YMCA. The complex was created by a partnership of the city, the school district, Ramsey County, the YMCA, the East Side Family Center, and the Wilder Foundation.

St. Francis High School, in downtown Louisville, is a coeducational, independent, interdenominational college preparatory high school with 140 students in grades 9 through 12 that moved into a 1913 neo-Classical YMCA building in 1976, after the Y moved out and various retail outlets, an athletic club, and professional offices moved in. In the 1990s, the school bought the building and engaged Potter & Cox Architects through a national architecture competition to create new classrooms, labs, and gathering spaces. The main stairs for the school occupy the atrium, formerly an unsightly central airshaft.

AIA's Architecture for Education Committee is trying to disseminate findings about the roles schools can play in community-building. And it is working with the AIA's Regional and Urban Design Committee to redefine standards for schools that accept mixed use and are in denser urban environments, explained that committee's chairman, David Dixon, of Goody, Clancy & Associates of Boston.

The Education Committee's 2005 chairwoman, Pamela Loeffelman, a principal at Perkins Eastman Architects in Stamford, Connecticut, said that "a lot of communities are starting to look at how you really think about town assets as a totality. We're working on a master plan, with HMFH of Cambridge, for Plymouth, Massachusetts. They need a town hall and a senior center, and are wondering if these can be somehow combined with a school."

$30 BILLION A YEAR IS BEING SPENT ON SCHOOLS. "IT'S A HISTORICALLY UNPRECEDENTED TIME," SAYS RON BOGLE.

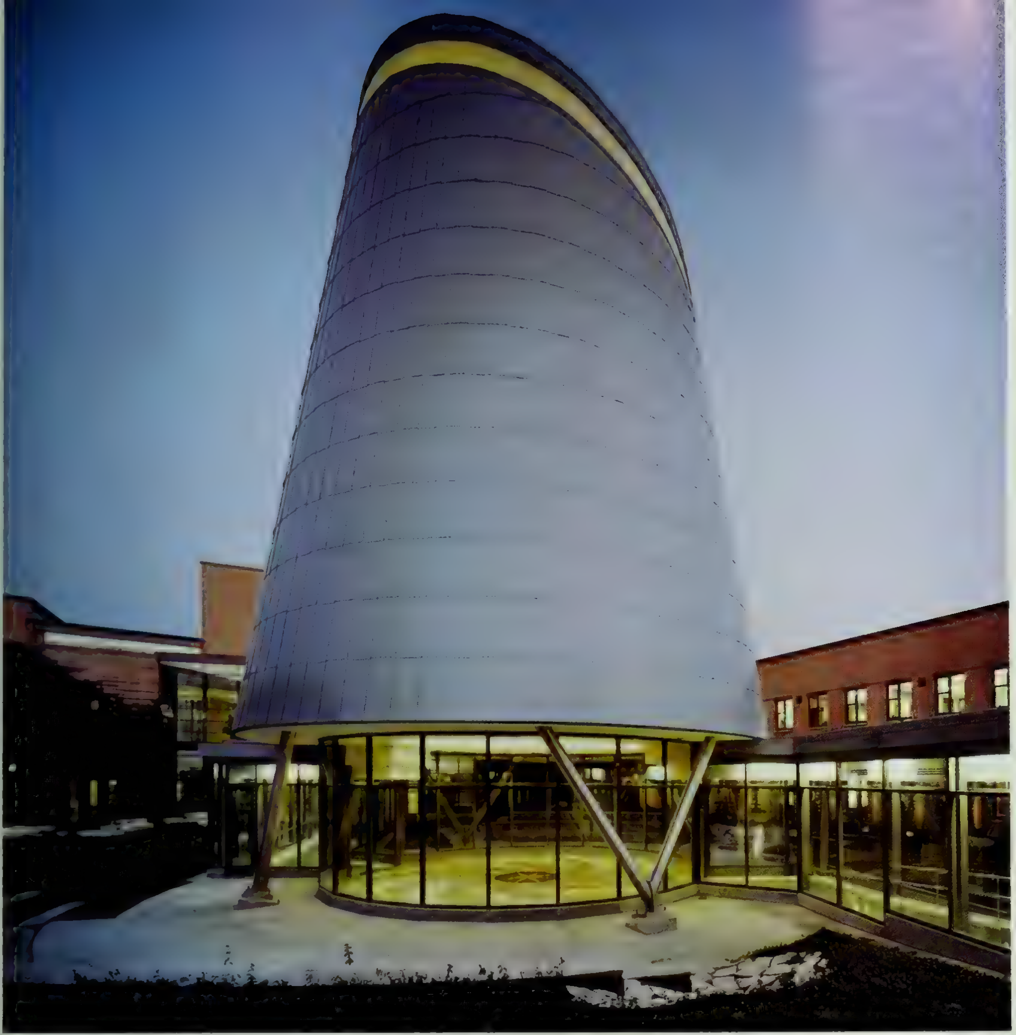
All three of the schools featured in this Review serve, in one way or another, as community centers as well as schools. They are catalysts for neighborhood revitalization, as are the independent 140-student St. Francis High School in downtown Louisville, which is housed in a historic YMCA and was renovated by Potter & Cox Architects, and the new parent-instigated Little Village Lawndale High School Campus on the South Side of Chicago that was designed by OWP/P. Neighborhood parents as well got officials to build the Waverly School when they took over its predecessor after the *New York Post* announced that the school had the worst case of asbestos in the city.

"The trend has been for urban districts to use suburban models and select a site of 30 to 40 acres on the fringe of the neighborhood, so everybody has to drive," said Ron Bogle. "With this, you not only impose a burden on parents with jobs and without cars, but also "lose the opportunity to stabilize an urban neighborhood."

Building an urban multipurpose facility is not easy, not only because existing standards require large footprints and big parking lots, but also because different government departments are in charge of building schools, parks, libraries, and other types of community facilities. Each one has a different culture and different budgets. But the problems are not insurmountable.

Bogle, who is not an architect, developed an interest in school design when he was president of the school board in Oklahoma City, where they "combined a traditional bond issue with a temporary half-cent sales tax, which later went to 1 percent, for school construction. We had to get state laws changed to do that." So it is possible.

Also, private funding is now being channeled into public schools. Camino Nuevo founder Philip Lance raises money privately. The Waverly School was built, in part, with funding from the Annenberg Foundation. In New York City, wealthy private citizens are beginning to fund public schools, and the Bill and Melinda Gates Foundation in Seattle has donated $2.3 billion to public education nationwide since 1999. It

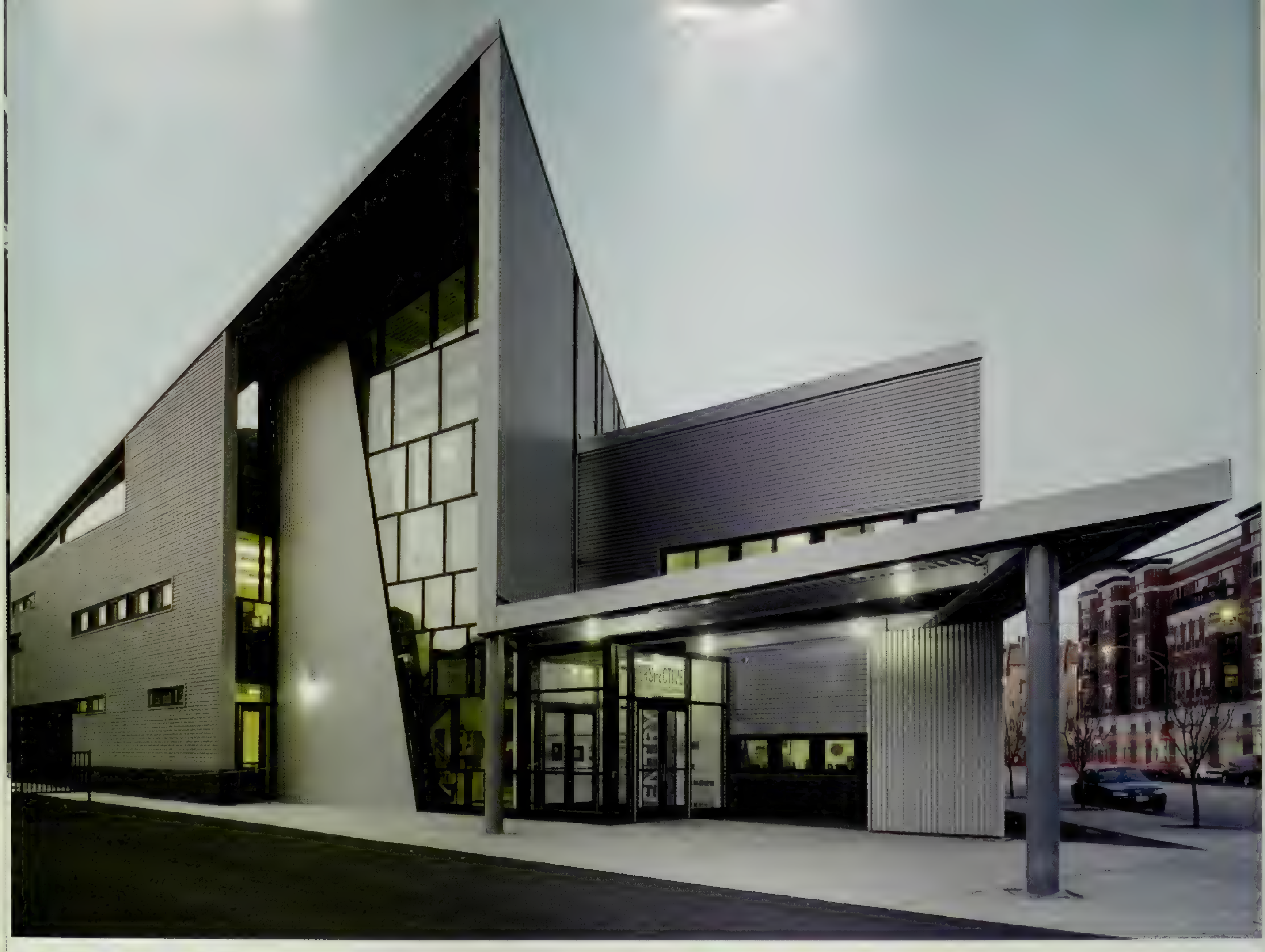


The Little Village Lawndale High School Campus, in Chicago, designed by OWP/P, was built as the result of a 19-day hunger strike in 2001 by 14 members of the surrounding community because a planned school had been put on hold for budgetary reasons. The campus, which opened in fall 2005, consists of four schools of 100 students each; they will add another 84 students each year. The Multicultural Arts High School, World Language High School, Social Justice High School, and Infinity: Math, Science, and Technology High School each has its own principal, but the students share an auditorium, a library, swimming pool, courtyards, dance studio, child care center, gyms, health center, long-distance learning labs, and literacy center.

invested $777 million in high school reform in 2005 alone, although its emphasis on increasing graduation rates means there is no way to break out how the foundation's interest in small schools may have led to school construction. In Philadelphia, the superintendent of schools is offering to name facilities after corporate and individual donors in an attempt to raise private funds. And the web sites of many public schools now allow visitors to make donations online.

Most educators believe small schools are more effective than large ones, especially for disadvantaged students, but because it costs more to build several small schools than one large one, taxpayer resistance may cramp the movement. In Florida, stringent class-size rules have led to additional school construction; now those rules are under fire. Noted the McGraw-Hill report, "Many state officials, including Governor Jeb Bush, have been concerned for some time that the limits on class size would cost too much"—an estimated $2 billion next year to build 6,500 classrooms. "State officials are predicting that over $4 billion will need to be spent over the next five years.... To date, there are no revenue sources earmarked to pay for the construction, although Florida real estate prices continue to grow, resulting in higher property taxes that are generally used to fund school construction."

Bogle said that too often today, "superintendents are not judged on educational or design quality but on whether they get a building completed on budget and on time. The educational-philosophy aspect is being squeezed out of the equation." One reason is that "in most communities, 70 to 80 percent of the people have no current connection with



Perspectives Charter School, which was started by two Chicago public school teachers, occupies a dense urban site on Chicago's near South Side, just north of Bertrand Goldberg's Raymond Hilliard Homes. Perkins + Will's Ralph Johnson made virtues of the pointed triangular site and tight budget by using dramatic angular forms and horizontal ribbon windows set in corrugated metal siding on a three-foot brick base. The school has small classes (limited to 24 students) and a family-like atmosphere in which students can feel safe while they're learning. The area around the school is now being transformed by new condominium developments.

their local schools."

The architect of one of the schools reviewed in these pages, Paul Broches of Mitchell/Giurgola Architects, explained that even where quality is customary, it might be hard to sustain. "After designing five schools for the School Construction Authority, I have come to appreciate their commitment to good construction practice. The durability of materials and the quality of construction specified has been a wise investment.... Unfortunately, a great deal of criticism was launched against the cost of schools in New York City and the specifications have now been downgraded."

As the McGraw-Hill report notes, one reason economic pressure is so severe is because in the November 2005 elections, "over $5 billion in bonds was approved. The largest of the group, a $3.9 billion measure for the Los Angeles Unified School District, passed easily"—and fortunately,

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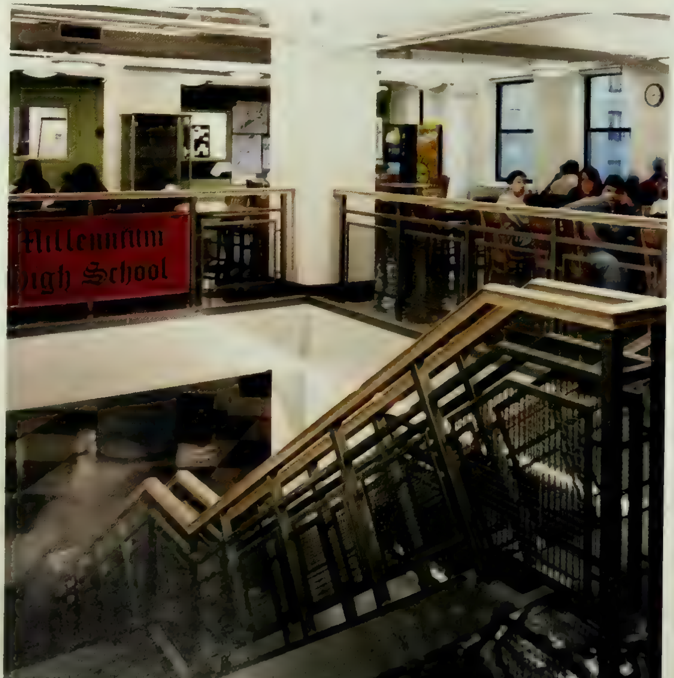
Millennium High School, in New York City, must be the most intensely urban high school in the country. It was built on several floors of a 1929 office building at 75 Broad Street after 9/11 as part of the New York New Visions effort to redevelop the area around the World Trade Center. The school for 461 students in grades 9 through 12 was designed by HLW of New York. It serves an unusually diverse student body—ethnically, economically, and geographically—from Lower Manhattan and the rest of New York.



as "the 1998 bond proposals [there are] beginning to expire" and the district "plans to open about 160 new schools and modernize hundreds more by 2012." Although California school construction has declined recently because bond money is running out and construction costs are high, levies of $282 million in Newport and $208 million in San Francisco also passed. Other large bond levies approved were for $450 million in Alamo, Texas, and in Arizona, for $213 million in the Mesa Unified School District and $162 million in Paradise Valley.

All these states are in the West, and as the McGraw-Hill report emphasizes, because school construction is driven by demographics, "growth rates vary widely across the country. The strongest growth over the next 12 years will come from the West (13 percent) and the South (5 percent)," while "declines are expected in the Midwest (down 2 percent) and the Northeast (down 5 percent). In total, enrollments will increase in 23 states, while they will decline in 27."

MODERN SCHOOLS ARE IMPORTANT TO OUR COMMUNITES BECAUSE THEY OFTEN MAKE UP FOR THE LACK OF COMMUNITY CENTERS.

Similarly, the types of schools built reflect demographics. In "2005, K–12 contracts were up 6 percent from last year. Primary schools gained 13 percent and junior high schools 14 percent, while senior high schools actually fell 4 percent."

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Paul Akiyama, AIA,
Principal, BCRA
Tacoma, Washington

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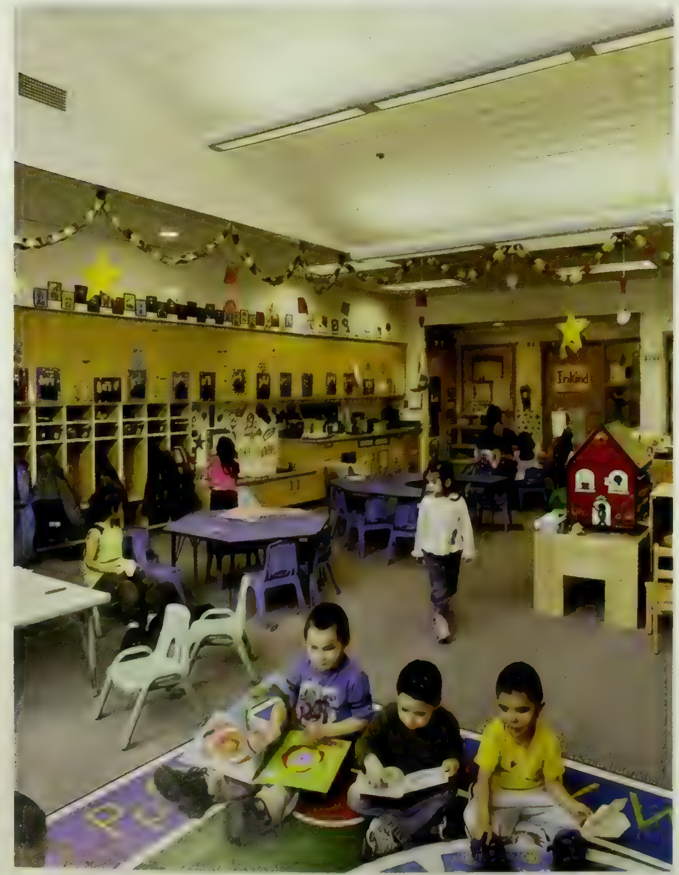

The Valerie A. Larson Family Resource Center, in Dillingham, Alaska, is part of a movement to include early childhood education in the public school curriculum. The brightly colored, small-scale structure, which includes a medical clinic, seems tailored to fun-loving young children. It was designed by Charles Bettisworth and Company Inc. of Fairbanks, Alaska. The Architects ensured plenty of natural light by orienting the windows for southern and south-eastern sun exposre.

In both the rapidly growing and the declining areas, however, schools with community facilities are on the rise. In new exurban areas, they can help create a sense of place and provide a town center. In older areas, they can help revitalize neighborhoods and attract suburbanites back to cities. Pamela Loeffelman said that "a lot of young people moving to third-tier cities—with populations of about 100,000—are starting to demand better schools," the way the parents in Brooklyn and Chicago did.

THE AAF ENCOURAGES ARCHITECTS TO RELY UPON FEEDBACK FROM TEACHERS, PRINCIPALS, AND CONTRACTORS.

Because schools are planned at the local level by people with little experience and because "there is not much discussion between educators, architects, parents, and contractors unless someone is working on a contract," Bogle said the AAF is holding a series of seminars with people working in communities all over the country. They are involving students, teachers, superintendents, architects, mayors, and other officials to determine "where we have accepted agreement about how and what should be built, or where there is disagreement, what the roadblocks are, and what the things we haven't thought about are." It is those "blue sky things" that may help to create the most effective and interesting schools of the future. ■

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Neighborhood Schools

MORE AND MORE, IT IS THE PEOPLE THAT YOU MEET WHEN YOU'RE WALKING DOWN THE STREET FOR WHOM A WELL-DESIGNED SCHOOL MATTERS. NEIGHBORHOOD PRIDE IS ON THE RISE FOR THREE SCHOOLS WE ARE REVISITING.

By Jayne Merkel

The good old days when public schools were the pride of their communities, when they were made of fine materials, commanded prominent sites, and were designed by the best architects in a town, may not quite be back. However, some community leaders are beginning to realize that a well-built school can be a significant asset, especially if it contains facilities that everyone can use. There is still pressure to spend as little as possible and to build quickly rather than well. But going back to see three schools featured in ARCHITECTURAL RECORD several years ago—Daly Genik Architects' Camino Nuevo Middle School in Los Angeles, Kell Muñoz Architects' Ann Richards Middle School in La Joya, Texas, and Mitchell/Giurgola Architects' Waverly School, formerly P.S. 156/I.S. 392, in Brooklyn—we learned that a well-designed school can make a difference, not only to the students and teachers who use it but to an entire neighborhood. Even real estate values increase when a handsome new school replaces a decrepit one. ■

1. **Waverly School, Brooklyn, New York**
Mitchell/Giurgola Architects

2. **Ann Richards Middle School, La Joya, Texas**
Kell Muñoz Architects

3. **Camino Nuevo Middle School, Los Angeles**
Daly Genik Architects

P.S. 156, I.S. 293
Brooklyn, New York

2003

WITH A JEWEL-LIKE PRESENCE, MITCHELL/GIURGOLA ARCHITECTS' SCHOOLHOUSE STANDS TALL.

By Jane F. Kolleeny

Architect: *Mitchell/Giurgola Architects—Paul Broches, partner in charge; John Doherty, Virginia Kindred, Faek Braick, Susan Stando, John Kurtz, team*
Architect of record: *John Ciardullo Associates*
Client: *New York City School Construction Authority*
Consultants: *DVL Consulting Engineers (m/e/p); Ysrael A. Seinuk (structural); Langan Engineering (landscape, site, civil); Branston Partnership (lighting); Cini-Little (kitchen)*
General contractor: *The DeMatteis Organization*

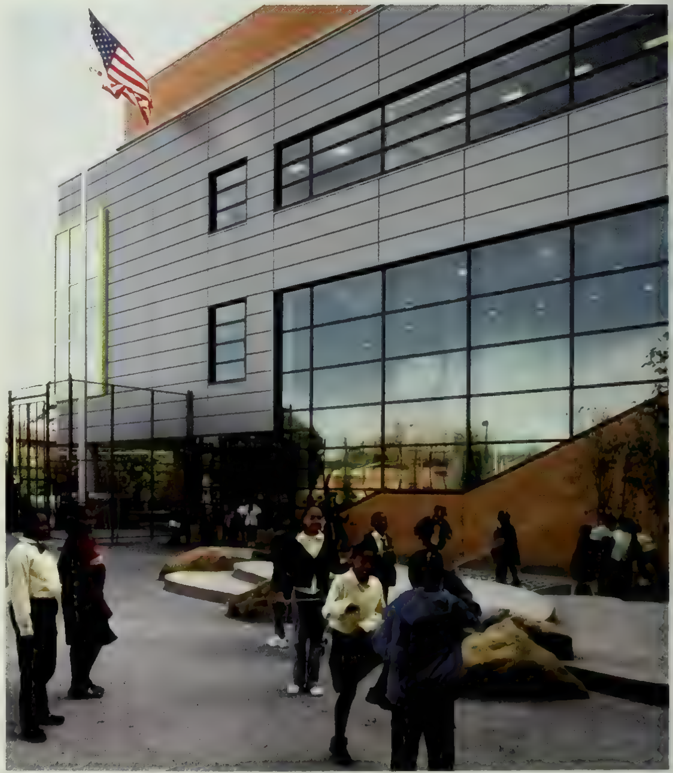
Size: *157,000 square feet*
Cost: *$52 million*

Sources
Roofing: *Johns Manville*
Hardware: *Atlantic Hardware*
Ceilings: *Armstrong*
Custom woodwork and paneling: *Eli NY Design*
Ceramic tile: *Daltile*
Interior ambient lighting: *Lumax; MagniFlood; Lithonia*
Exterior lighting: *Holophane*
Flooring: *Azrock; Polysafe (auditorium)*
Plastic laminate: *Formica*
Paint: *Sherwin Williams*

For more information on this project, go to Building Types Study at **www.archrecord.com**.

In the mid-1800s, tract homes and high-density tenements changed a once-rural Brownsville into a dreary urban neighborhood in southwestern Brooklyn. Effectively a slum, with unpaved streets and no sewers, it was home to struggling first-generation Jewish immigrants who worked in Manhattan's garment district. After World War II, it was abandoned by the industry's more successful entrepreneurs, who were replaced predominantly by African-Americans. Although efforts were made in the 1970s and '80s to upgrade the area, it remains neglected today.

Brownsville needed a hero, and it appeared in the form of this school, which encompasses almost a full city block and plays a vital civic role in the rough and tumble neighborhood. Doubling as a community resource center, the building is utilized by most of the local families for performances, sports, and social and educational events. It replaces a 1908 school building on the same site that had been vandalized and was subsequently demolished, in 1993, because it contained asbestos and lead.



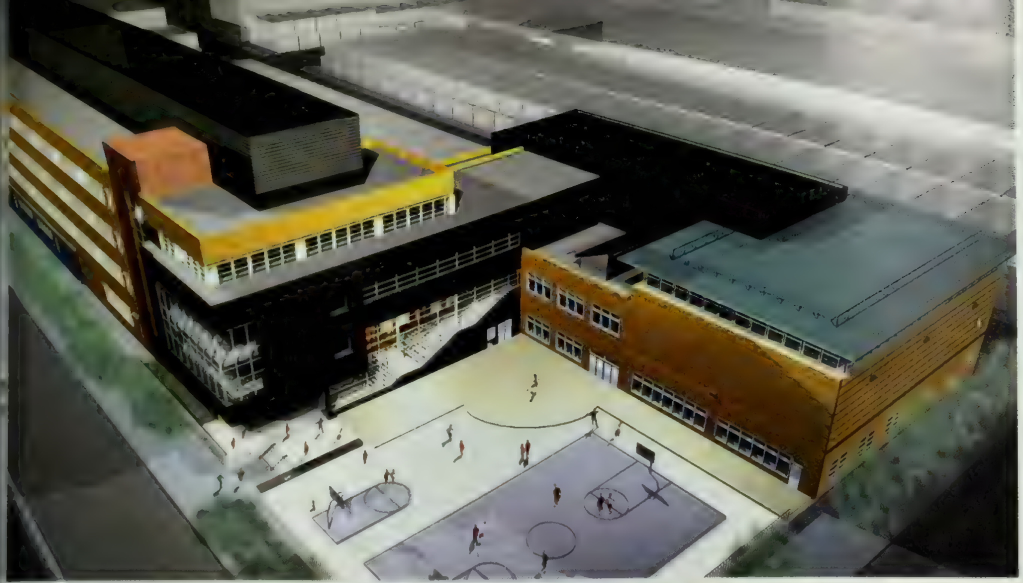
Program

The new school accommodates 200 gifted seventh and eighth graders and 900 K-6 students. One long wing of the four-story building is composed mostly of classrooms, with the gym, cafeteria, library, and other public areas clustered in the other wing so that classrooms can be secured when the school is closed.

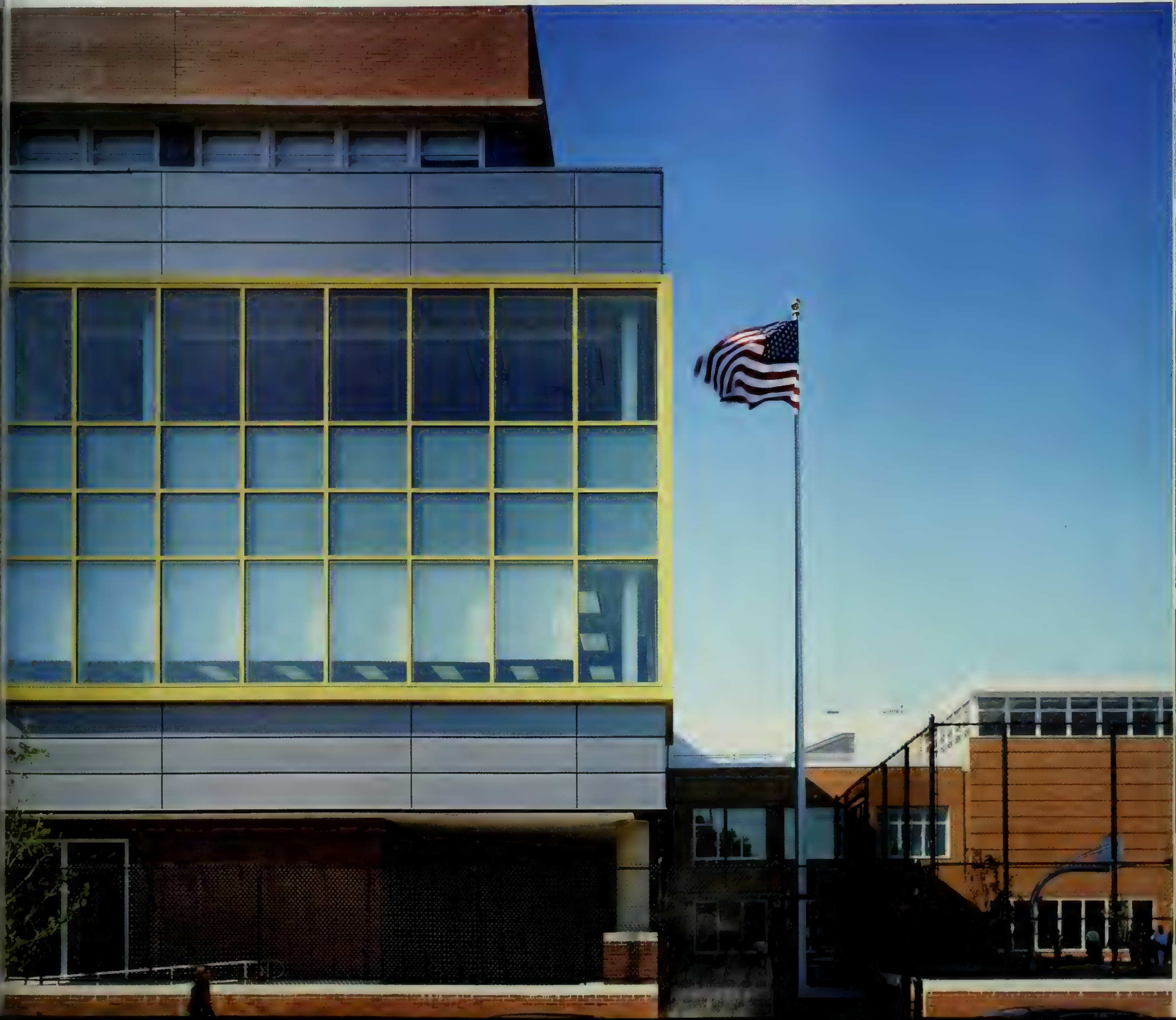
An Annenberg grant for art made it possible to offer the kids an enriched arts program. These funds helped create two arts classrooms, a dance studio, music room, recording studio, and a 416-seat, stadium-style auditorium. Principal Martha Torres, a cheerful, assertive woman who displays a combination of sternness and gentleness befitting a school principal, finds art to be a most effective teaching tool: "We present art in a multidisciplinary way—we discuss cultures, and the students explore them in every conceivable way—through dance, art, music, history, literature. Art saves these students."

Solution

As the central theme of the curriculum, art is also reflected in the school's design. The most visibly compelling part of the building, a two-story wall of glass tiles designed by



The tan-brick, white-trimmed mass of the school takes up almost a whole city block (left). At the main entrance, the facade is composed of a handsome aluminum panel system and yellow curtain wall (below and opposite).



The design of the school supports the theme of learning through art. A wall composed of glass tiles (this page), glazed hallway display areas (opposite, left), and a 416-seat, stadium-style auditorium (opposite, right) all pay tribute to creativity.

noted sculptor Ned Smyth overlooks the prominent grand stairway marking the main entrance. Illuminated at night and prominently visible to the community through a glazed wall, it fronts Sutter Avenue, one of the main arteries in Brownsville. The playground and public areas of the school open onto this street, bringing in more life. Paul Broches, FAIA, of Mitchell/Giurgola Architects, remarks that "the school is the main civic building in the area and serves a critical community purpose in addition to its role as schoolhouse."

The client's design standards required security screening over the windows at the first-floor level. "Frequently other schools use expanded wire mesh, which has a somewhat prisonlike association. We have found a perforated metal panel that provides an equivalent measure of protection, if not more, and is much more attractive both looking from the inside and outside," says Broches.

Standard features include durable, high-quality, low-maintenance materials: terrazzo floors, steel doors, painted concrete block walls in classrooms, and attractively finished glazed concrete block in corridors and all public spaces to assure a utilitarian, tanklike resiliency that is still user-friendly. Designed for future wireless use, classrooms are flexible and can be converted from standard format to the popular small cluster.

Commentary

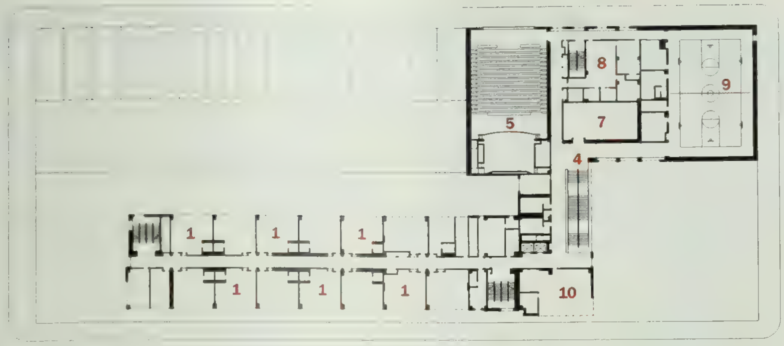
School principal Torres copes well with the chaos that hordes of young children inflict. "We like the age mix of students. While they don't interact that much, the intermediate students become mentors and do internships with the younger kids." Through its clean design, large accommodating public spaces, and airy classrooms, the school has uplifted the local community. Torres continues, "Everyone wants to be here! Neighborhood residents have tried to establish residency in the school's catchment area in order to send their children here."

A delightful art exhibition

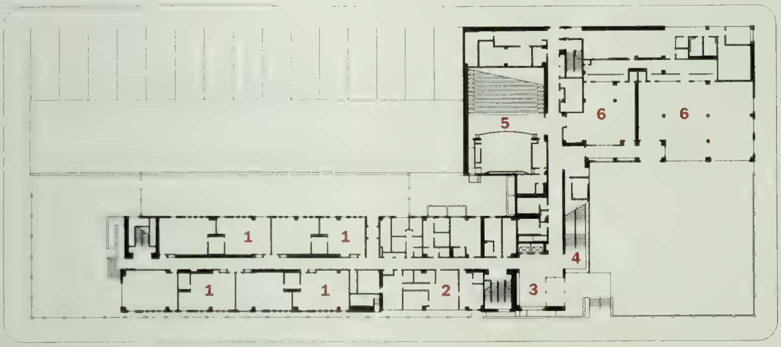
recently put together by the second graders spanned the length of one of the long corridors of the classroom wing. The kids had created an interpretive show about such famous works as Van Gogh's *Starry Night*, Da Vinci's *Mona Lisa*, and Matisse's cutouts and still lifes. The tiled and durable hallways provide the perfect, immutable surface for such transient displays—gypsum board would immediately have been torn to shreds. Additional glazed hallway display areas were designed by the architect so that each classroom can present their trophy works in protected public areas.

The tan-brick, white-trimmed mass of P.S. 156/I.S. 293 stands tall next to the adjacent row houses; in another neighborhood it might not be as exciting as it is here. It is clear from the cheerful faces of eager uniformed children lining the hallways that this school has gone well beyond the dictates of education, serving instead as an inviting beacon of hope for the whole community. ■

1. *Classrooms*
2. *Administration suite*
3. *Entry*
4. *Stair*
5. *Auditorium*
6. *Cafeteria*
7. *Dance studio*
8. *Music studio*
9. *Gymnasium*
10. *Art classroom*



SECOND FLOOR



GROUND FLOOR

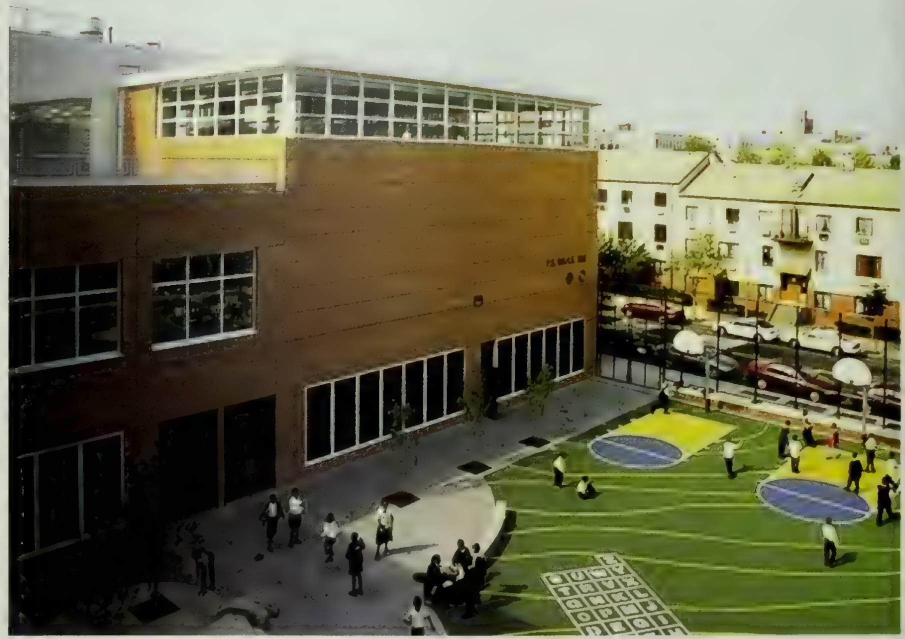
Post-Occupancy 2006

The Waverly School, formerly P.S. 156, I.S. 293 Brooklyn, New York

By Jayne Merkel

By any measure, the Waverly School is a resounding success. But what the architect, Paul Broches, FAIA, of Mitchell/Giurgola Architects in New York City, is happiest about is that "the founding principal, her successor, the teachers, and parents are delighted with the building." Broches admits that he had an easy job because "the principals, teachers, and parents were invested" from the beginning: "What better foundation for an architect to begin to work?"

The Waverly School has two principals because it comprises both an elementary school and a special magnet middle school for the arts. Magnet school principal Shirley Wheeler-Massey says, "It is truly difficult to describe the feelings that come over me whenever I walk into our state-of-the-art building.… I am particularly pleased with the specialty arts rooms.… No one leaves our building without a smile on their face after spending time in these rooms.



The playground appeals to both sudents and neighbors, who enjoy the life it gives to the adjacent street.

"Teachers absolutely love, treasure, and appreciate the great features within their classrooms," Wheeler-Massey continues. "They have decorated their rooms, the ceilings, and the hallways with authentic student work.… These great displays have not changed our building, but have simply enhanced its great architectural designs."

Waverly teacher Deborah Glauner mentions "the wonderful row of bookshelves underneath the windows: I love that! No piles of books for me, plenty of room to arrange my classroom library." She also likes the fact that "the classrooms are big enough to allow me to group and regroup my students easily and quickly."

"When I first walked up to the building more than four years ago, I couldn't believe my eyes," Glauner says. "Having grown up going to an older school in the Bronx, I truly appreciated—and still appreciate—the layout of the building. I remember my school as having been very dark, without many windows. My classroom has its own wall of windows that open at the top and bottom, allowing plenty of fresh air and sunshine into the room. As a teacher, I really appreciate our little area outside, where you can eat lunch when the weather allows. Just like the kids, teachers like to go outside on a nice day."

Several students who were admitted to more than one magnet school said they chose Waverly (which was formerly P.S. 156/I.S. 392) because of the building. "I stepped inside and my heart jumped with glee," Tanika Simmonds beams. "I'd seen schools like this on television but I'd never imagined being in one—a beautiful structure inside and out." Now that she's there, she feels that "lockers should be in the hallways" and that the "whole school should be bigger" with a "much bigger auditorium. This is a middle school for the gifted and talented, right?" Still, she acknowledges, "I'd rather be here than anywhere else." As is true at most successful schools, those involved with Waverly say they wish there were even more—and bigger—facilities.

When student Yanique Walker first saw the building, she thought it was "rather astonishing." She likes the clean, generous hallways that make it easy to get to class and the large windows with "beautiful views," but notes, "There used to be clean bathrooms. Well, sayonara to that." She adds that the "gym is large, but it's cut in half." Still, "this school is a pleasure to come to."

Waverly parent Kishayna Hazlewood agrees: "The minute you walk up to the new building, you are greeted by a glass exterior displaying a large staircase and colorful tile walls. It gives any visitor a warm and inviting feeling and an idea that something wonderful is waiting for you inside. The ample sunlight acts as a rejuvenator. Another wonderful fea-

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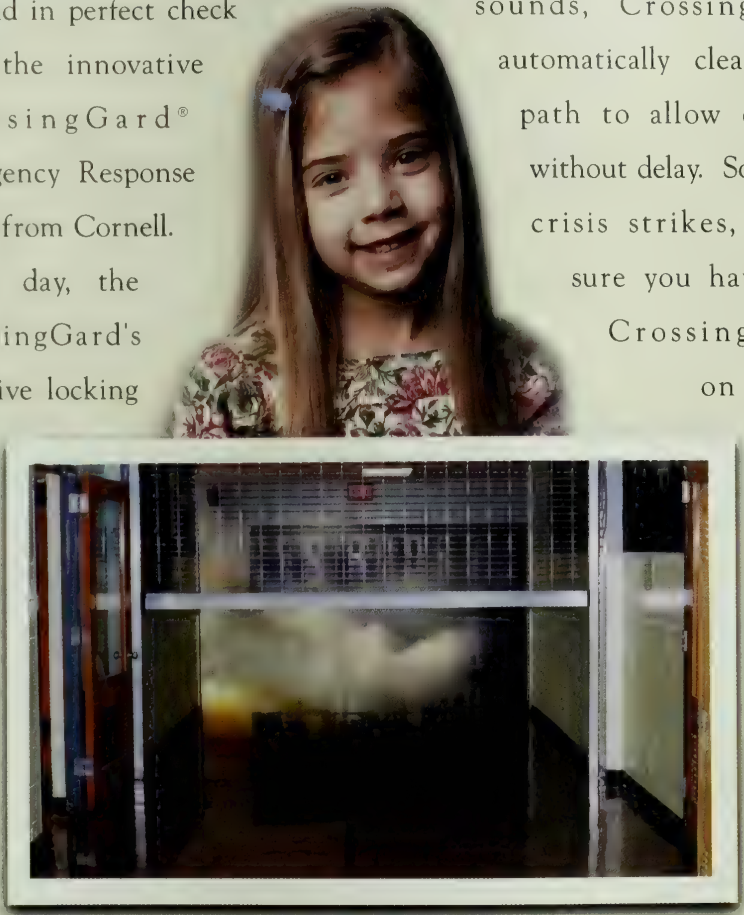

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ure is the bathrooms in the lower-grade classrooms. This is a comfort to parents, knowing that your child is always safe. The hallways and staircases are open and well lit, giving the feeling that everything is always in the open. My final credit is to the large lobby with seating to make parents feel comfortable and welcome as they wait for their children."

"The benefits of being in this beautiful building are paying off," says Oswaldo Malave, principal of the elementary school. "We do not have a discipline problem. Our scores are soaring; 58 percent of our fifth-grade students are reading at grade level; 78 percent of fourth-grade students are at level in math. When I first came to P.S. 156, in 1988, the building, which was built in 1911, had large cracks in the walls, water leaks, plaster was falling from the ceilings.... The students sensed the little value placed on their education. In those days, as few as 17 percent of the students were reading at grade level. The new building opened in 2001. It was a great event in Brownsville. Today it is loved and admired by all who enter it. Its [illegible] to the caliber of our children, artistically and academically."

Shirley Wheeler-Massey reports equally good news. "Today the middle school component is flourishing ... At full capacity, we are the home to some 300 fifth-to-eighth-grade gifted students. We are ranked number one in the city for mathematics and number three for English language arts." If she had a chance to design the building now, what would she want? "Additional classrooms for expansion, larger rooms for middle school students, and more secure gating around the building."

However, the playground is safer than most because it is located "along Sutter Avenue, the main street through Brownsville, to animate the street," architect Paul Broches explains. "If we had it to do over again, a primary focus would be to find an expression of the building that would reduce its apparent size."

And yet its size has helped it make an impact on the neighborhood. "Parents tell me they love walking past the school and that their property values have gone up. An article in the New York Daily News confirmed this," Principal Malave reports. "Parents want their children in this school.... The school has given the community a sense of pride. Whereas people used to leave the community for better schools, they now come into this community."

THE SCHOOL HAS INCREASED PROPERTY VALUES AND ENCOURAGED PARENTS TO MOVE INTO THE COMMUNITY.

And everyone wants more facilities. Shazia Naeem, a library teacher and consultant for the arts, says that "library circulation statistics show a momentous increase" in this "aesthetically elegant, well-planned, sundrenched, and well-ventilated space." Because the library "was designed for wireless use, it now has a functional wireless network that has gained the attention of all the school staff" and "is often chosen for workshops and conferences," so it too could be expanded. Nothing succeeds like success. ■

LESSONS LEARNED

- A well-designed building can actually enhance student performance.
- Placing bathrooms for lower-grade students inside classrooms makes parents feel more secure.
- An appealing building can attract families to a neighborhood and talented students to a magnet school, especially when it is well-lit with colorful murals visible from the exterior.
- No matter how large and numerous facilities are, teachers, students, principals, and parents will want more and larger ones after they are fully utilized.

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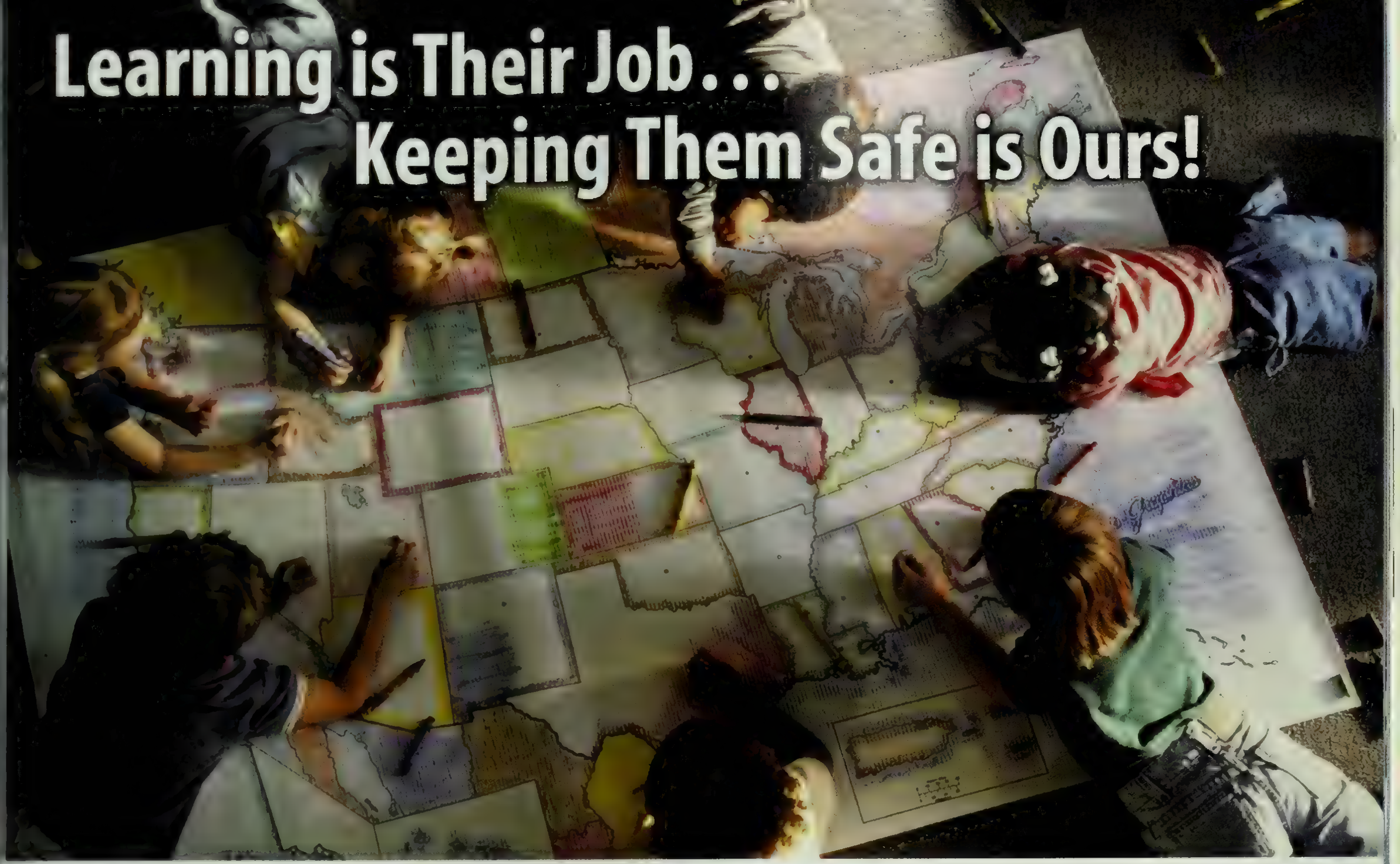
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Ann Richards Middle School

La Joya, Texas

2003

HONORING LA JOYA'S MEXICAN CULTURE, KELL MUÑOZ ARCHITECTS CREATES AN OASIS OF COLOR IN A HOT BLEACHED LANDSCAPE.

By David Dillon

Architect: *Kell Muñoz Architects—John H. Kell, Jr., FAIA, Henry R. Muñoz III, principals; Steven Land Tillotson, AIA, Henry Ortega, AIA, Benito Polendo, AIA, Manuel Hinojosa, AIA, Hector Gamboa, Carlos Rios, Baldemar Bernal, Carlos Mejia, team*

Client: *La Joya Independent School District*

Consultants: *Hinojosa Engineering (civil/structural); HMG & Associates (m/e/p); Alexander Boedy Associates (landscape)*

General contracting: *Wilson Construction*

Size: *130,000 square feet*

Cost: *$8.4 million*

Sources

Wood doors: *Baur Flooring*

Glazing and metal doors: *Polvado Glass*

Metal/glass curtain wall: *Polvado Glass and Vistawell*

Hardware, aluminum storefronts, glass: *MacLaird Glass*

Tile: *Mion Terrazzo Tile and Marble*

Steel: *Tri-City Steel Fabricators*

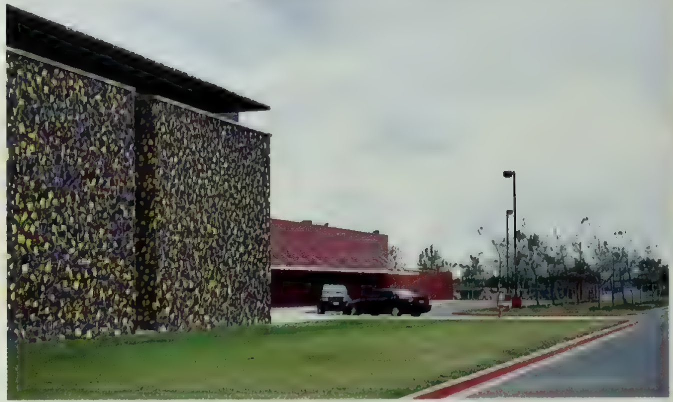
Brick: *Valley Block and Brick*

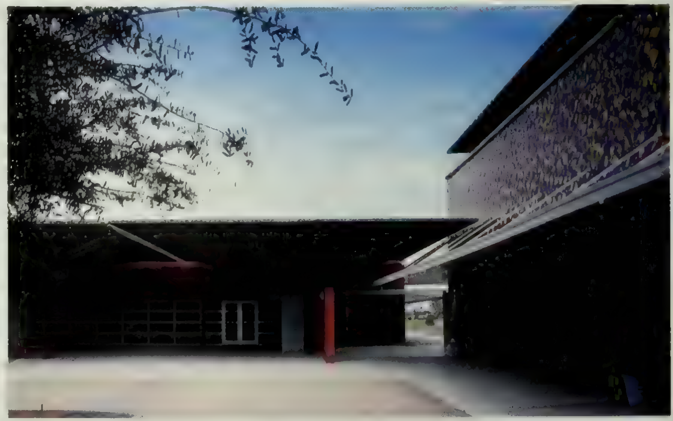
Roofing: *Sechrist-Hall Company*

Paint: *Guerra's Paint Company*

For more information on this project, go to Building Types Study at **www.archrecord.com.**

La Joya sits on a flat, featureless stretch of the Rio Grande Valley between Laredo and McAllen, Texas. Its name, "the jewel," refers to a small natural lake west of town that early settlers claimed sparkled like a gem. But daily life is seldom so alluring. La Joya is a poor community of migrant workers and day laborers, who pick fruit, pour concrete, and look after the small ranches in the area. The dot-com boom of the 1990s was only a rumor here and in the rest of the valley.





Program

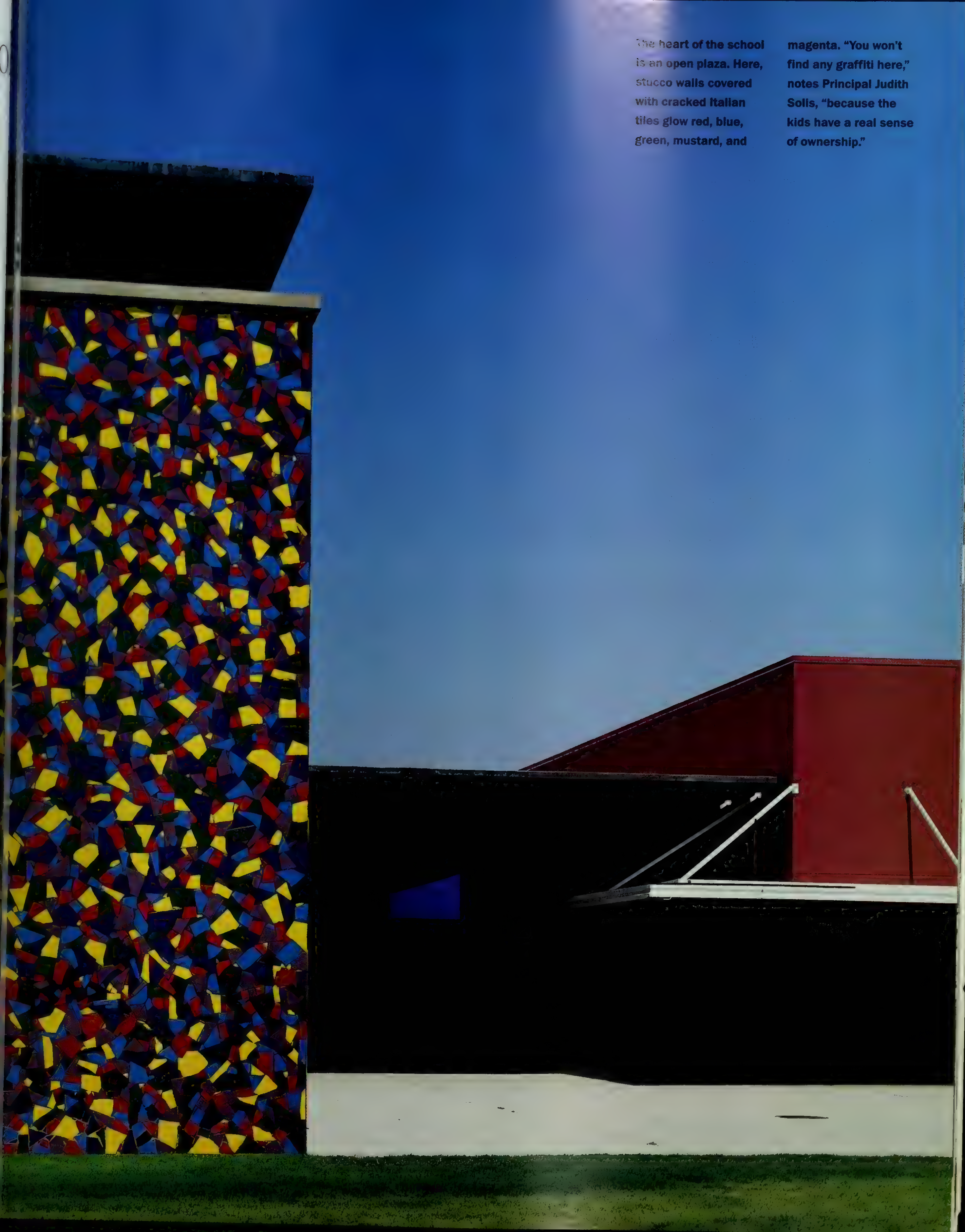
The Ann Richards Middle School, designed by Kell Muñoz Architects, of San Antonio, and named for the state's tart-tongued former governor, captures both the reality and the resilience of the town. Its architecture is direct and pragmatic, yet also playful and visually exuberant. Stucco walls glow red, blue, green, mustard, and magenta, the colors of Mexico and the desert. Several are covered with cracked Italian tiles that seem to vibrate in the South Texas sun.

School principal Judith Solis says it took time for the students to get used to the color. "Most schools are so bland that at first they were bewildered," she recalls. "Students from other schools teased them about being in a theme park. We had to teach them that the color exists in the rocks and plants of this place, that it is part of who they are."

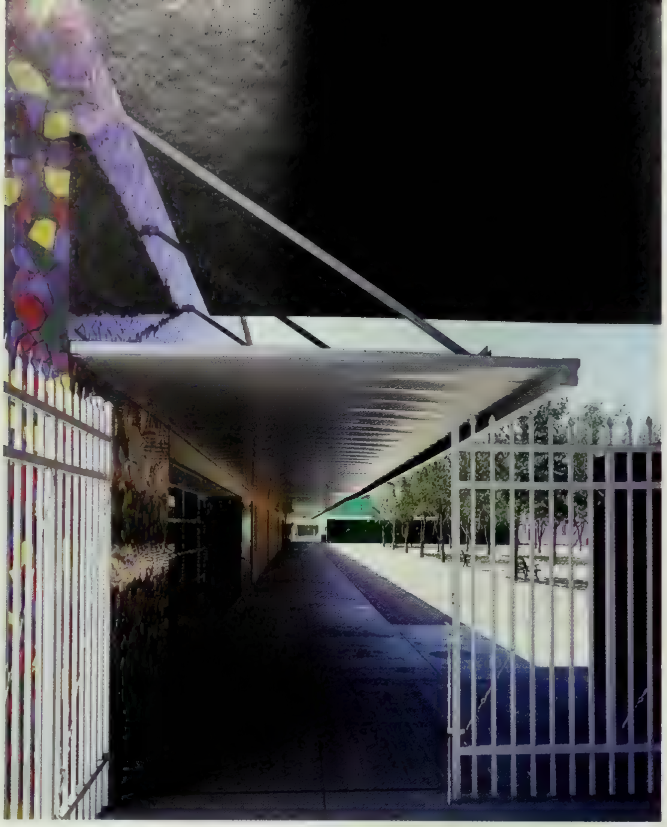
Solution

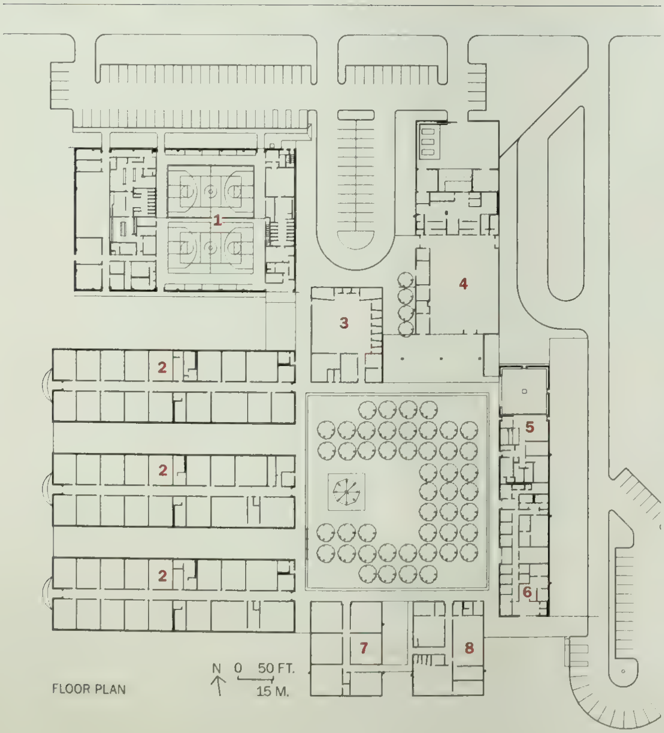
The heart of the school is a large open plaza, similar to those in the small Mexican towns from which many La Joya residents come. It is paved in concrete bricks, with a grid of live oak trees and a small pavilion, or *kiosko*, for festivals and performances. The plaza is the social and cultural center of the school, where students mingle between classes and return in the evenings and on weekends for special events. Former governor Richards, known to teachers and students as *comadre*, or godmother, bought the furniture for

Contributing editor David Dillon is the architecture critic for The Dallas Morning News.



The heart of the school is an open plaza. Here, stucco walls covered with cracked Italian tiles glow red, blue, green, mustard, and magenta. "You won't find any graffiti here," notes Principal Judith Solis, "because the kids have a real sense of ownership."





FLOOR PLAN

1. *Gym*
2. *Classrooms*
3. *Music room*
4. *Cafeteria*
5. *Library*
6. *Administration*
7. *Orchestra, choir, dance*
8. *Computer, art, theater*

the plaza and often donates the honoraria from speaking engagements in the valley for books and programs.

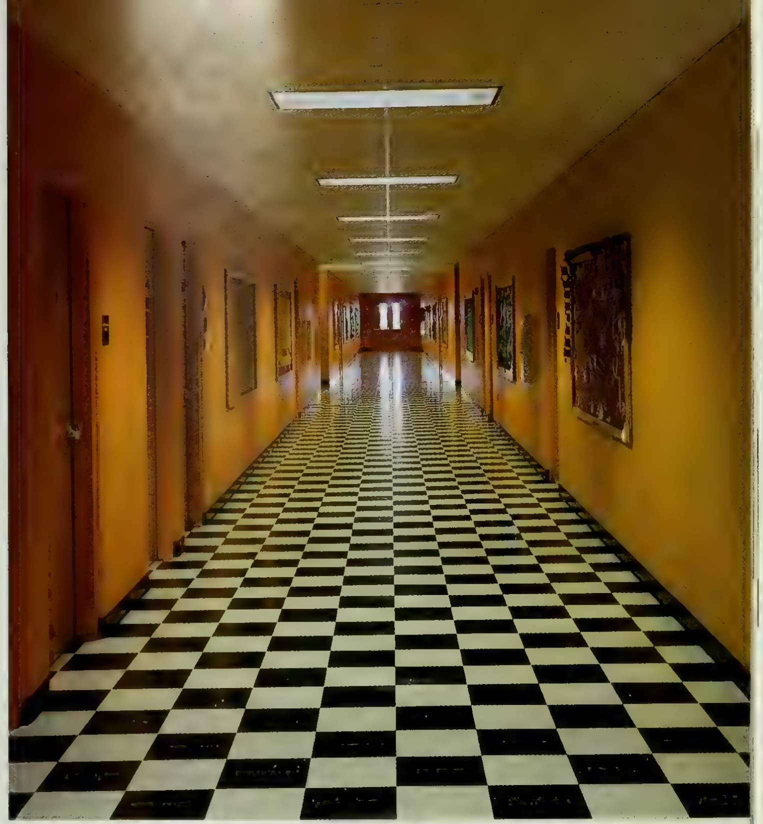
Kell Muñoz designed the school for 1,000 students, a number that has now grown to 1,250. All of them are Title I, and most are economically and linguistically disadvantaged, meaning that for them school is more than a place to learn English and math; it is a refuge and a sanctuary. "You won't find any graffiti here," notes Ms. Solis, "because the kids have a real sense of ownership in the school. It connects them to their own culture and encourages them to feel good about themselves." Each grade (six, seven, and eight) has its own classroom wing, long one-story rectangles with bright walls and black and white linoleum floors. Theater, dance, art, and music classes are held in adjacent buildings, which are linked by simple metal awnings that provide protection from the sun and rain. (La Joya is a center for mariachi music, and on many days visitors to the school are greeted by the sound of guitars and trumpets.) The gymnasium occupies a large, prefabricated metal building that fits the low-budget, ad hoc aesthetic of the school and the region.

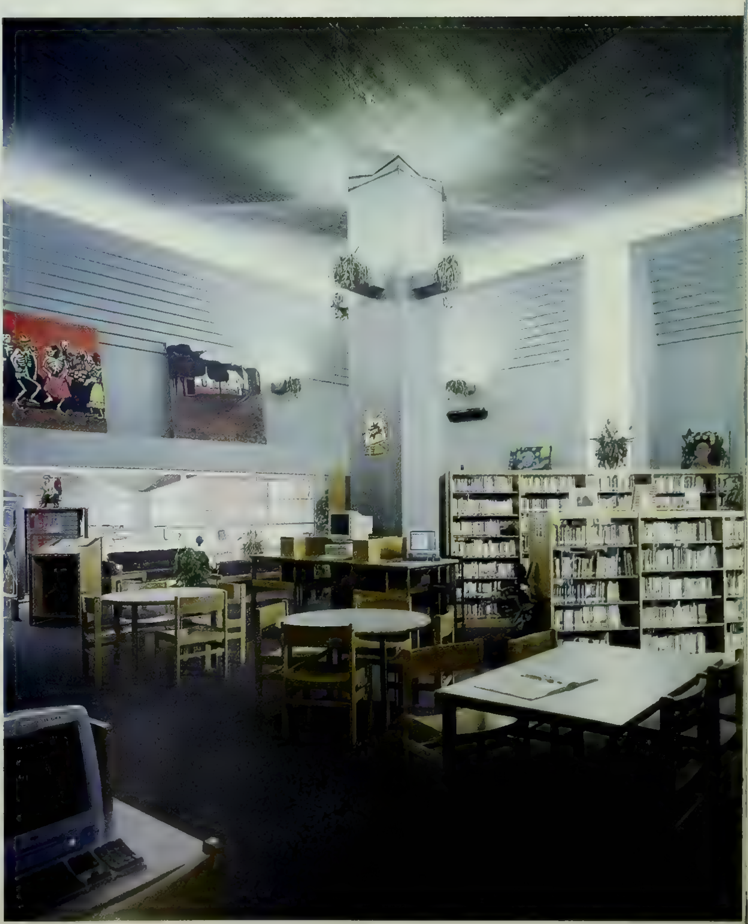
The architectural showpiece is the library, with its cracked tile walls and 20-foot hyperbolic paraboloid roof that rests on a single Mayan-style column in the center of the room. These bold forms were developed by Mexican architect Felix Candela and adapted by John Kell's mentor, O'Neil Ford, for schools and factories around Texas. They make the library a special place, where books and reading can open the door to the wider world.

Commentary

The school cost $9 million ($67 per square foot), and inevitably the economies show in some of the detailing. The paraboloid shells and the butt-glazed windows clearly stretched the contractors. But the architects' overall design is exactly right. La Joya needed a place that was intimate, lively, and welcoming, and the Ann Richards Middle School is all of those things—a source of pride and pleasure along a shifting cultural fault line. ■

A large open plaza, peppered with oak trees and a *kiosko* used for performances and festivals, functions as the social and cultural centerpiece of the school (opposite, left and right; below left two). Inside, the hallways feature bright walls and black and white linoleum floors (top right), and the library houses a single Mayan-style column that holds up the 20-foot roof (bottom right).





PHOTOGRAPHY: © GREG HURSLEY (BOTTOM LEFT TWO); PAUL BARDAGJY (RIGHT TWO)

Post-Occupancy 2006

Ann Richards Middle School La Joya, Texas

By Jayne Merkel

The design of Kell Muñoz Architects' Ann Richards Middle School, in La Joya, Texas, was tailored not only to the climate, but to the students' ethnicity and the culture of their ancestors. The classroom wings are organized around a large open courtyard, much in the way a Mexican town surrounds a *zocalo*.

The design did more than create a space where the entire school community could gather, both formally and informally, explains John H. Kell Jr., FAIA. "The 'village' plan allows for new streets and facilities to be added or altered." The open space can also be used by the larger community, and like those at other schools around the country, it come alive with events even when school is not in session.

The school's bright, intense colors, typical of Mexico, also derive from the students' heritage, and glow in the sunny Southwest. "The thing I like best about the school are the rich colors that seem to bring an atmosphere of happiness to our students," Melba Lozano, the principal, says. Unfortunately, she adds, some of the colors have been difficult to replace when walls needed to be repainted. "A few alterations have been made in the color of the walls because the original colors were no longer available."

THE OPEN COURTYARD CREATES A 'VILLAGE' STUDENTS AND THE COMMUNITY CAN UTILIZE AS A GATHERING SPACE.

Lozano also likes "the separation of the different grade levels and our elective classes," which makes the school run smoothly. If she were designing the school now, though, she would "make the science rooms more conducive to laboratory work. There are no air ducts to help ventilate chemical gases and fumes." Even in a middle school, science laboratories need to be fairly sophisticated today.

Whenever alterations had to be made, she continues, "we met with teachers to discuss minimal distractions because we didn't want to change the original plan of the school. It was easy, because all the staff wanted the uniqueness of the building to remain. In the same way, we plan to ensure that our building will always remembered by people who visit our school."

The architects believe that the village plan allows for easy changes and expansion that won't destroy the original concept of streets and squares. That is important since the school population in La Joya is fast growing. What they are happiest with, though, is "the human interaction in the courtyard—the town plaza in our concept. Students meet one another here, in a controlled setting, between classes, and become a 'student body.'" ■

In La Joya's quickly growing sector, Ann Richards Midle School's open space will allow for future additions and expansions to be planned easily. The concept grew around the idea of a *zocalo* in a Mexican village.

LESSONS LEARNED

- In a warm climate, a school can be organized around an open central space the way a village can be planned around a town square.
- Color and pattern used boldly can give a school a festive atmosphere and sense of identity at minimal cost.
- When teachers and students love a school building, they will work to maintain its integrity whenever changes have to be made.
- Laboratories in a middle school need to be equipped and ventilated just like those used for more advanced education.

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Camino Nuevo Middle School
Los Angeles, California

2003

LIKE A MAGIC WAND, DALY GENIK'S SKILL TRANSFORMS NEGLECTED BUILDINGS INTO OPPORTUNITIES FOR CELEBRATION.

By Alice Kimm

Architect: *Daly Genik Architects—Kevin Daly, AIA, principal in charge; Christopher Genik, AIA, Gerlinde Artzmann, Kyle Chad Clark, Josh Kenin, Alice Park, Brian Reiff, Chia Hung Wang, Jared Ward, team*
Client: *Pueblo Nuevo Development*
Consultants: *John A. Martin and Associates (Phase II, structural); William Koh (Phase I, structural); IBE Consulting Engineers (mechanical); Silver, Roth & Associates (electrical)*
General contractor: *Miller Contracting*

Size: *20,000 square feet*
Cost: *$3 million*

Sources
Elevators/escalators: *Schindler*
Interior ambient lighting: *Zumtobel*
Custom benches: *Nexwood*
Paneling: *Nexwood*
Cement plaster wall coverings, wall tile: *Daltile*
Paints and stains: *ICI Dulux*
Storefront door: *Kawneer Tuffline*
Storefront system: *Kawneer TriFab*
Metal/glass curtain wall: *Metal Sales (corrugated, perforated stainless steel)*

For more information on this project, go to Building Types Study at **www.archrecord.com.**

In 2000, Kevin Daly and Chris Genik of Daly Genik Architects completed a highly acclaimed charter elementary school in Los Angeles [RECORD, February 2001, page 134]. The inspired transformation of an abandoned mini-mall, it fulfilled the first phase of a master plan for the new Camino Nuevo Charter Academy campus. The academy is the brainchild of Philip Lance, a highly proactive priest, who has been aided by school specialist Paul Cummins and charter-school developer ExED. Camino Nuevo responds to crisis conditions in one of the most impoverished areas of Los Angeles.

Featured here is the just-completed next phase—a middle school housed in an 8,500-square-foot, one-story former warehouse and an adjacent 10,500-square-foot, three-story former office building. The latter runs along Wilshire Boulevard, a major thoroughfare. With this project, Daly Genik continues its exploration into upgrading the conventions of generic building types and using derelict buildings to create vibrant cultural and civic facilities.

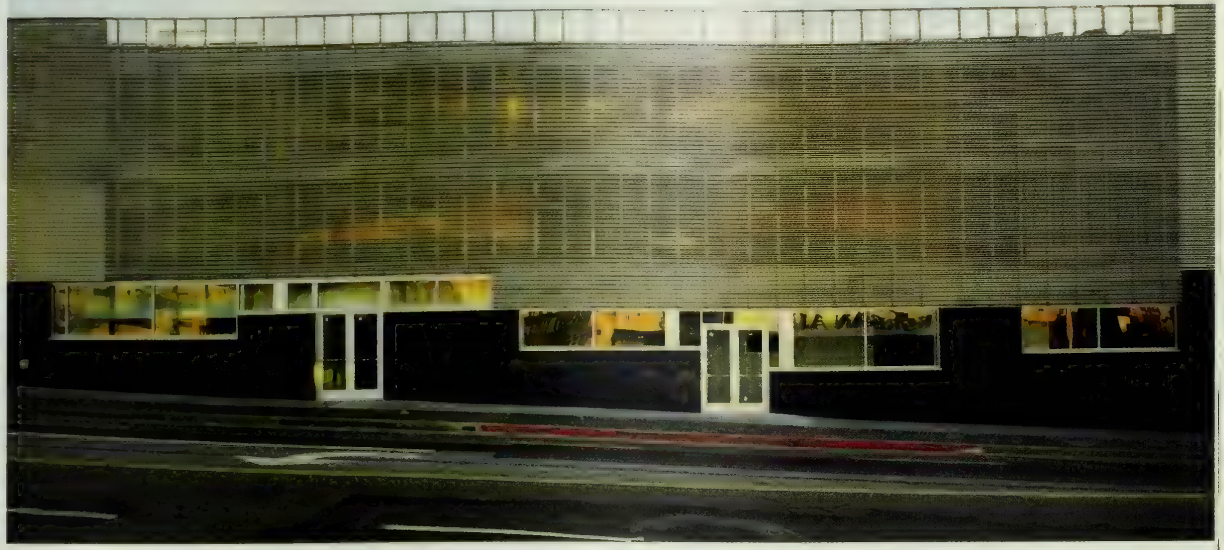
Program

When the school opens this fall, its 250 to 300 students will occupy 10 classrooms, four located in the one-story volume of the former warehouse and six on the second and third floors of the former office facility. (A continuous circulation system allows the two structures to function as one building.) The raised classrooms are linked by wide corridors that run directly alongside Wilshire. A parents' center and the school's administrative offices reside on the ground floor. An independently functioning community health center also occupies this level.

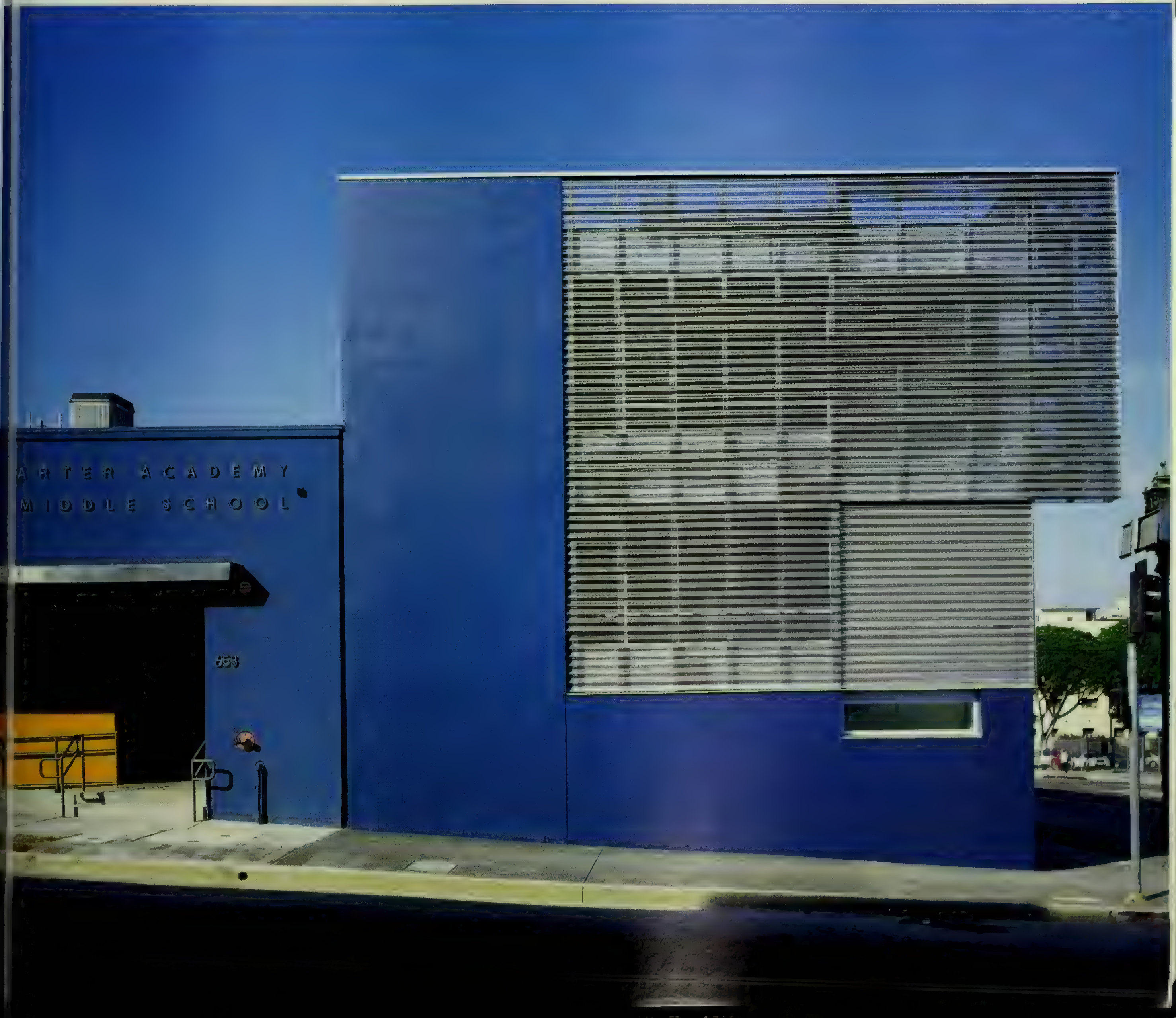
Alice Kimm practices architecture in Los Angeles.

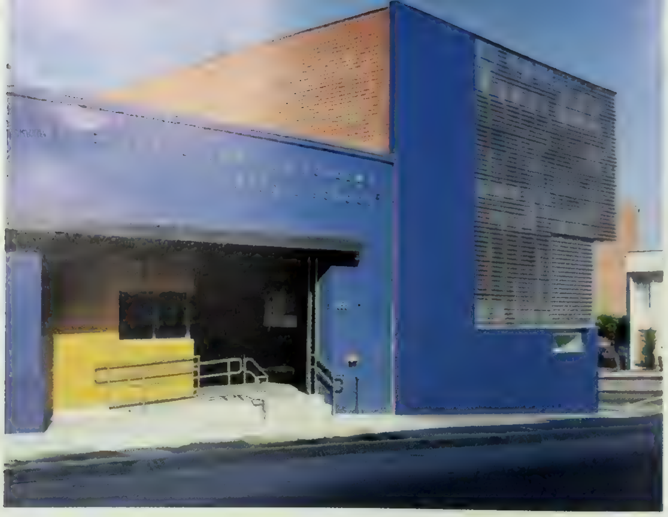
Solution

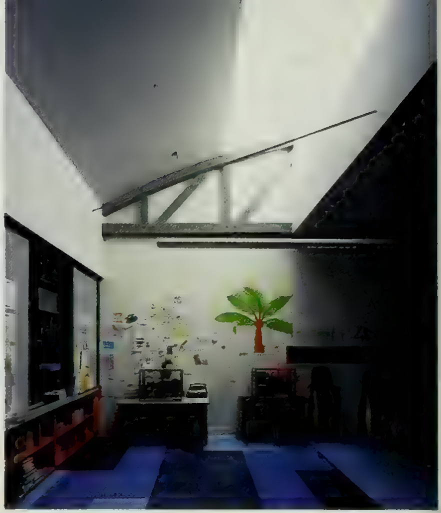
Philip Lance comments that an urban school "is a chance to make a great impact on a neighborhood, where you have a large captive constituency; you can broaden the educational mission to include adults." He thus challenged Daly Genik to create a facility that celebrates the neighborhood and welcomes its residents—a facility that is, both formally and metaphorically, transparent.



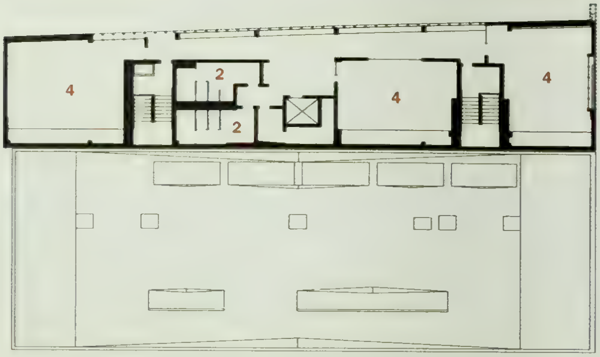
Corrugated, perforated stainless-steel sheets replace the existing curtain wall along Wilshire Boulevard. This attractive element creates a giant sunscreen, mitigating the light, views, and sound that pass through its porous surface (right and below).



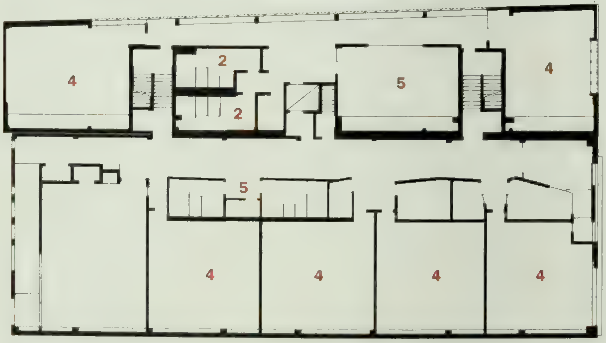




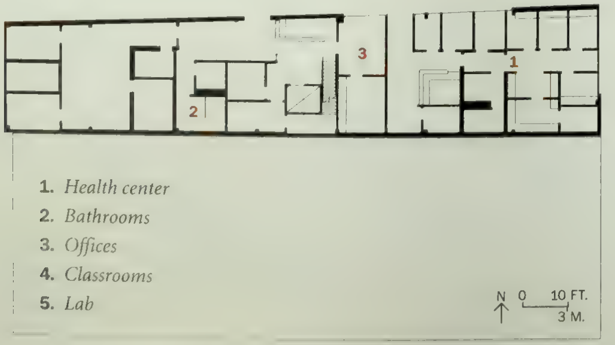
The school's main entrance is located in the one-story former warehouse, where it abuts the former offices (left). West-facing clerestory windows and large openings in the roof bring light into the classrooms (right).



SECOND FLOOR



FIRST FLOOR



GROUND FLOOR

The main entrance to the school is located at the south end of the one-story former warehouse building. This structure is divided down the middle, with classrooms on the west side and the school's major circulation spine, or street, on the east. Looking through the front gates provides a captivating view down the street, which will be full of activity when the facility is open.

Introducing natural light into this building's interior was of utmost importance. This was accomplished with west-facing clerestory windows in the classrooms and large openings in the roof above the street. The openings are left uncovered; noises dissipate into the sky, and fresh air and light are present at all times. The street is further enlivened by a curved, folded, and colored plaster wall enclosing the classrooms. This wall further animates one's view into the school from the street outside.

The most interesting feature of the renovated, three-story office building is the treatment of the upper-story facades protecting the corridors along Wilshire Boulevard. The architects replaced the existing curtain wall with corrugated, perforated stainless-steel sheets to create a giant sunscreen. Light, views, and sound pass through its porous surface. From the street, silhouettes of people moving back and forth behind the facade are clearly visible. The transparency is vital; according to Kevin Daly, "Philip Lance's expectation that this school be a visible presence in the city influenced our thinking about this facade. We felt it to be our responsibility to bring a catalytic quality to it, to reveal some aspect that is totally unexpected."

Commentary

Camino Nuevo proves that liabilities such as run-down or abandoned buildings can be turned into assets. However, reusing existing structures is not this project's only lesson. Its openness to the surrounding neighborhood, in answer to Philip Lance's original mandate, creates an important urban impact. As Daly notes, "There is no way to isolate it. Because of its open-ended nature, the perimeter is never set. The boundary is a set of possibilities." He expands on this approach: "The school could become one in a chain of projects logically connected throughout the city as social infrastructure."

While there is little certainty that such a windfall of development would come to pass in the area, those who care about the quality of urban life are hopeful. Camino Nuevo provides an exciting alternative for needy neighborhoods that have only small parcels of land with existing buildings on them to offer up as potential development sites. If this school can take up an entire block previously composed of abandoned and underused structures and turn it into a vibrant and stabilizing force in the community, then this is good news indeed. ■

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Post-Occupancy 2006
Camino Nuevo Middle School
Los Angeles, California

By Jayne Merkel

"The physical presence of the building in the neighborhood"—that's what pleases Camino Nuevo founder Philip Lance most. "It is a very handsome structure that supports our identity as a school striving to meet high standards." As such, it is a bright sign in what was once a blighted neighborhood.

And with its parents' room, health center on the grounds, and rigorous academic program, it is an excellent example of the kind of neighborhood school other communities are trying to create. As Lance notes, "The building is unusual in this city, where most public school buildings are very large structures surrounded by acres of land and fences. Our building is very much 'on the street,' making it a part of the community in a way that the suburban model of school buildings, imposed upon the city by the design guidelines and restrictions that come with traditional public bond financing, can't be. The adaptive reuse preserved the existing fabric of the neighborhood, and although some might describe it as quirky, it has a unique personality that won't be replicated."

Kate Farrar, Camino Nuevo's principal, thinks "the architects did a wonderful job of bringing the buildings—originally two—into one, cohesive building." It is, after all, one thing to convert industrial buildings, and quite another to make an attractive, functional school out of them. "I think that the exterior of the building is clean and simple, but aesthetically pleasing," Farrar says. "Although we don't really 'look like a school,' according to many of our constituents who have spoken with me, we bring a different element of beauty and design into the community. The corrugated steel on the outside of the building is very attractive and has drawn the attention of passersby and local architects alike." However, "it is also an inviting location for mischievous students to experiment with the forces of gravitation; they like to slide small items through and watch them fall, which is ultimately incredibly difficult to clean up."

Farrar describes the classrooms—her favorite element of the school. "The 10 classrooms create a great small learning environment for our students. The rooms on the main floor are simply gorgeous. Their built-in storage space, covered by sliding whiteboards, is incredibly helpful for the teachers. The addition of skylights, as there are no windows to those rooms, was an excellent way to 'bring the outside in.'"

Architect Kevin Daly, of Daly Genik Architects, agrees that the classrooms were a major success. "We went to a lot of trouble to bring natural light into the first phase, the one-story warehouse building, and it was really worth it. We also included electrically operated blinds. It was critical for the skylights not to be seen as a nuisance."

If Philip Lance were building the school today, he says, he "would invest in solid wood cabinetry. The plastic laminate cabinetry doesn't age well. Pieces come unglued, leaving unsightly pressed-board edges." Indeed, when ARCHITECTURAL RECORD revisits schools (and other types of buildings), users invariably report that they wish they would have—or could have—invested in better materials, that it pays off in the end.

The one change officials at the school did make, says Lance, fell into that category. "We have added acoustic paneling to some of the classroom walls to reduce noise levels. This was cut out of the original plans due to budget constraints." Lance wishes he had also "created planting strips along the front of the building to facilitate vine growth that would discourage graffiti. We spend a lot of time painting graffiti—not by our students; by youth who are not affiliated with our programs."

A change that Principal Farrar would have made, in hindsight, is in the material of the hallway's outside wall and roofing: "The ground floor is not covered with a complete roof; the architects chose to use a partially open mesh covering for the hallway instead. While this is usually a benefit for us, to bring in the California sunshine, it has proven hazardous in rainy weather as the hallway gathers pools of water."

One change planned, Farrar says, is "eventually adding a second exit to our multipurpose room. Fire codes require this for occupancy beyond 50 people. We absolutely have need for rooms that can hold this number or more on a regular basis. In addition, we will probably change one of the walls of this room so that it can be opened to a greater space. This space will be new to our facility, as we have just acquired the buildings directly south of the middle school building and will be making these into a pre-K center."

Kevin Daly explained how that addition would be made: "The program was really pretty fixed, so planning for change was not such a big priority." The significant change is the connection to the property next door, for use as a preschool and a dance studio, through the multipurpose room. "The most startling realization," he says, "was to find how intensively the buildings are used. A charter school runs longer days and longer academic calendars. There is greater impact on the building and no time to do significant maintenance." Camino Nuevo, like other successful schools, may suffer from its success, but that is a problem many educators can only dream of. ■

LESSONS LEARNED

- The appearance of a school can make a positive impact on the neighborhood even if it is an unusual, avant-garde design involving the renovation of industrial buildings.
- Built-in storage space, covered by sliding whiteboards, is helpful for teachers; the quality of solid wood cabinetry is better than laminate.
- Even classrooms without windows can be flooded with natural light through skylights—preferably ones with electrically operated blinds.
- A neighborhood school in an urban area does not have to occupy a large, empty, suburban-type site.

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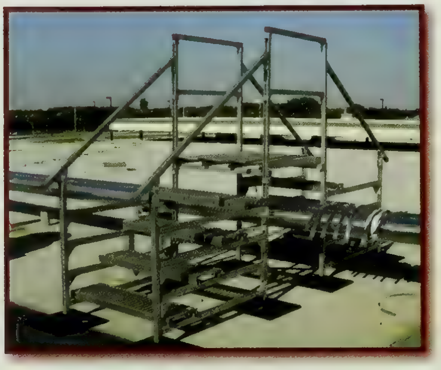

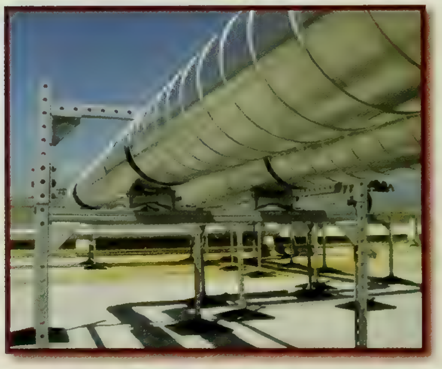

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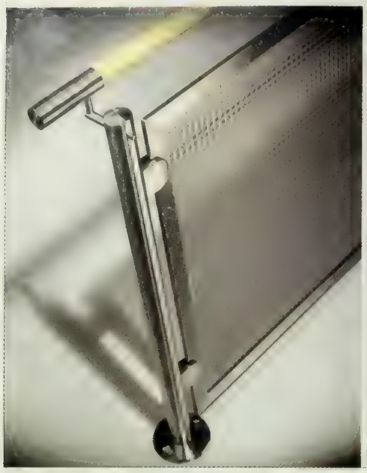

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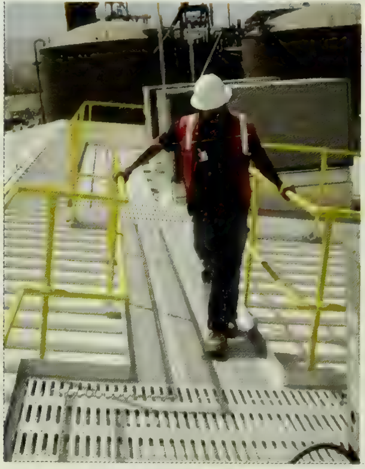

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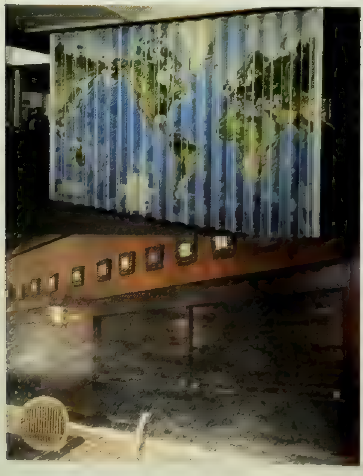

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► Ahead of the curve

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► Brighter student body

To increase student productivity through the presence of natural daylight, architects Shuller, Ferris Lindstron and Associates of Fayetteville, North Carolina included a large skylight in their design for Gray's Creek High School in Hope Mills, North Carolina. Skywall Translucent Panels manufactured and installed an 84' translucent pyramid skylight over the school's entry and cafeteria. The large skylight included a 10' insulating, laminated glass pyramid to top off the translucent skylight. Skywall Translucent Systems, Terrell, Texas. www.skywall.com **CIRCLE 103**

◄▼ For builders and musicians

Tot Mate's new play center (below) allows children to build using blocks, gears, or both, on the same table. The built-in block grid accommodates the most popular block sizes, while the gear grid snaps onto the block grid for use with gears. The play center offers roomy storage and comes in two sizes. The new I.D. Systems Music storage line (left) includes shelf, locker, and clothing configurations suited for musical instruments, personal items, uniforms, and folios. The storage features thermofused melamine laminated faces, high-impact edges, and finished interiors and exteriors. Stevens Industries, Teutopolis, Ill. www.idsystemstorage.com **CIRCLE 101**

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The Connection Goes Live.

McGraw-Hill Construction's proven ability to connect the construction industry to vital information has just become a lot more powerful

By Roger Y

Norbert W. Young Jr., FAIA
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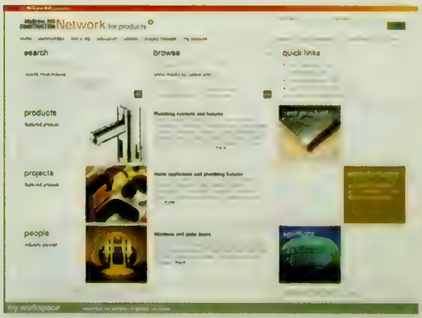

Roger Yee is an architect and writer living in New York

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